{json:api}

Get started

OPERANDs

Digital Input

Read I Single

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Enable read I/O	To read any device inputs or outputs through the JSON API this option must be enabled.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

For more information see easySoft 7 Onlinehelp.

Requested element

I(<number>)

Parameters

number	input number 1…max.; the maximum depends on the device or the extention devices; e.g. EASY-E4-UC-12RC1 has a maximum inputs of 8 and a maximum outputs of 4.

Call example

```
/api/get/data?elm=I(5)
```

Response body example

```
{
 "OPERANDS": {
  "ISINGLE": [{
    "INDEX": 5,
    "V": "0"
   }
  ]
 }
}
```

Response Parameter

Each operand returns for every input, output, marker or ID an array of the following parameters :

INDEX	Number of the operand; start counting with 1;
V	Operand's value, if no error occurs. Operand's datatyp depends on firmware version FW: FW ≥ 1.20: INTEGER FW ≤ 1.10: BASE64STRING For more information see How to convert BASE64STRINGs.
ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

Read I Range

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

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◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Enable read I/O	To read any device inputs or outputs through the JSON API this option must be enabled.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

For more information see easySoft 7 Onlinehelp.

Requested element

I(<range start>,<range end>)

Parameters

range start	First input number to read 1…max.; the maximum depends on the device or the extention devices; e.g. EASY-E4-UC-12RC1 has a maximum of inputs of 8 and a maximum outputs of 4.
range end	Last input number to read 1…max.; the maximum depends on the device and extention devices; e.g. EASY-E4-UC-12RC1 has a maximum inputs of 8 and a maximum outputs of 4. For more information see easySoft 7 Onlinehelp.

Call example

```
/api/get/data?elm=I(1,32)
```

Response body example

```
{
 "OPERANDS": {
  "IRANGE": [{
    "START": 1,
    "END": 32,
    "V": "gAAAAA=="
   }
  ]
 }
}
```

Response Parameter

Each operand returns for every input or output an array of the following parameters :

START	INT Range start
END	INT Range end
V	BASE64STRING: Operand's value For more information see How to convert BASE64STRINGs.

Read I All

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Enable read I/O	To read any device inputs or outputs through the JSON API this option must be enabled.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

For more information see easySoft 7 Onlinehelp.

Requested element

I

Parameters

Parameters

–

Call example

```
/api/get/data?elm=I
```

Response body example

```
{
 "OPERANDS": {
  "IALL": "gAAAAAAAAAAAAAAAAAAAA=="
 }
}
```

Response Parameter

Each operand returns for every input, output, marker and ID an array of the following parameters :

IALL	BASE64STRING: Value of all digital inputs I.

The responded BASE64STRING should be converted to 128 bits: 8 x 2 bytes or 16 x 1 byte INTEGER variables. Each input I is mapped to one of the 128 bits.
For instance if BASE64STRING was converted in 8 x 2 bytes with the status of input I10 is represented in byte 1 and status of input I34 in byte 4.

For more information see How to convert BASE64STRING into BIT values.

Digital Output

Read O Single

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Enable read I/O	To read any device inputs or outputs through the JSON API this option must be enabled.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

For more information see easySoft 7 Onlinehelp.

Requested element

O (<number>)

Parameters

number	Output number 1…max.; the maximum depends on the device and extention devices; e.g. EASY-E4-UC-12RC1 has a maximum inputs of 8 and a maximum outputs of 4.

Call example

```
/api/get/data?elm=O(10)
```

Response body example

```
{
 "OPERANDS": {
  "OSINGLE": [{
    "INDEX": 10,
    "V": "0"
   }
  ]
 }
}
```

Response Parameter

Each operand returns for every input, output, marker or ID an array of the following parameters :

INDEX	Number of the operand; start counting with 1;
V	Operand's value, if no error occurs. Operand's datatyp depends on firmware version FW: FW ≥ 1.20: INTEGER FW ≤ 1.10: BASE64STRING For more information see How to convert BASE64STRINGs.
ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

Read O Range

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Enable read I/O	To read any device inputs or outputs through the JSON API this option must be enabled.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be

	enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

For more information see easySoft 7 Onlinehelp.

Requested element

O(<range start>,<range end>)

Parameters

range start	First output number to read 1…max.; the maximum depends on the device or the extention devices; e.g. EASY-E4-UC-12RC1 has a maximum of inputs of 8 and a maximum outputs of 4.
range end	Last output number to read 1…max.; the maximum depends on the device and extention devices; e.g. EASY-E4-UC-12RC1 has a maximum inputs of 8 and a maximum outputs of 4. For more information see easySoft 7 Onlinehelp.

Call example

```
/api/get/data?elm=O(1,64)
```

Response body example

```
{
 "OPERANDS": {
  "ORANGE": [{
    "START": 1,
    "END": 64,
    "V": "AAAAAAAAAAA="
   }
  ]
 }
}
```

Response Parameter

Each operand returns for every input or output an array of the following parameters :

START	INT Range start
END	INT Range end
V	BASE64STRING: Operand's value For more information see How to convert BASE64STRINGs.

Read O All

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be

	activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Enable read I/O	To read any device inputs or outputs through the JSON API this option must be enabled.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

For more information see easySoft 7 Onlinehelp.

Requested element

0

Parameters

–

Call example

```
/api/get/data?elm=0
```

Response body example

```
{
 "OPERANDS": {
  "OALL": "AAAAAAAAAAAAAAAAAAAAAA=="
 }
}
```

Response Parameter

Each operand returns for every input, output, marker and ID an array of the following parameters :

OALL	BASE64STRING: Value of all operands; For more information see How to convert BASE64STRINGs.

Analog Input

Read AI Single

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function

	blocks will be read before the web server is started.
☑ Enable read I/O	To read any device inputs or outputs through the JSON API this option must be enabled.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

For more information see easySoft 7 Onlinehelp.

Requested element

AI (<number>)

Parameters

number	Analog input number 1…max.; the maximum depends on the device and extention devices; e.g. EASY-E4-UC-12RC1 has a maximum inputs of 8 and a maximum outputs of 4.

Call example

```
/api/get/data?elm=AI(5)
```

Response body example

```
{
 "OPERANDS": {
  "AISINGLE": [{
    "INDEX": 5,
    "V": 42
   }
  ]
 }
}
```

Response Parameter

Each operand returns for every input, output, marker or ID an array of the following parameters :

INDEX	Number of the operand; start counting with 1;
V	Operand's value, if no error occurs. Operand's datatyp depends on firmware version FW: FW ≥ 1.20: INTEGER FW ≤ 1.10: BASE64STRING For more information see How to convert BASE64STRINGs.
ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

Read AI Range

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Enable read I/O	To read any device inputs or outputs through the JSON API this option must be enabled.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

For more information see easySoft 7 Onlinehelp.

Requested element

AI(<range start>,<range end>)

Parameters

range start	First analog input number to read 1…max.; the maximum depends on the device or the extention devices; e.g. EASY-E4-UC-12RC1 has a maximum analog inputs of 4.
range end	Last analog input number to read 1…max.; the maximum depends on the device and extention devices; e.g. EASY-E4-UC-12RC1 has a maximum analog inputs of 4. For more information see easySoft 7 Onlinehelp.

Call example

```
/api/get/data?elm=AI(1,8)
```

Response body example


```
{
 "OPERANDS": {
  "AIRANGE": [{
    "START": 1,
    "END": 8,
    "V": "1QMAAAAAAACCBQAA/w8AAAAAAAAAAAAAAAAAAAAAAA="
   }
  ]
 }
}
```


Response Parameter

Each operand returns for every input or output an array of the following parameters :

START	INT Range start
END	INT Range end
V	BASE64STRING: Operand's value;

For more information see How to convert BASE64STRINGs.

Read AI All

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Enable read I/O	To read any device inputs or outputs through the JSON API this option must be enabled.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

For more information see easySoft 7 Onlinehelp.

Requested element

AI

Parameters

–

Call example

```
/api/get/data?elm=AI
```

Response body example

```
{
 "OPERANDS": {
  "AIALL": "tQMAAAAAADVBQAA/w8AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
        AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
        AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
        AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
        AAAAAAAAAAAAAAAAA"
 }
}
```

Response Parameter

Each operand returns for every input or output an array of the following parameters :

AIALL	BASE64STRING: Value of all operands;

For more information see How to convert BASE64STRINGs.

Analog Output

Read AO Single

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

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◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Enable read I/O	To read any device inputs or outputs through the JSON API this option must be enabled.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

For more information see easySoft 7 Onlinehelp.

Requested element

AO (<number>)

Parameters

number	Analog output number 1…max.; the maximum depends on the device and extention devices; e.g. EASY-E4-DC-6AE1 has a maximum analog outputs of 2.

Call example

```
/api/get/data?elm=AO(13)
```

Response body example

```
{
 "OPERANDS": {
  "AOSINGLE": [{
    "INDEX": 13,
    "V": 42
   }
  ]
 }
}
```

Response Parameter

Each operand returns for every input, output, marker or ID an array of the following parameters :

INDEX	Number of the operand; start counting with 1;
V	Operand's value, if no error occurs. Operand's datatyp depends on firmware version FW: FW ≥ 1.20: INTEGER FW ≤ 1.10: BASE64STRING For more information see How to convert BASE64STRINGs.
ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

Read AO Range

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

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☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

For more information see easySoft 7 Onlinehelp.

Requested element

AI(<range start>,<range end>)

Parameters

range start	First analog input number to read 1…max.; the maximum depends on the device or the extention devices; e.g. EASY-E4-DC-6AE1 has a maximum analog outputs of 2.
range end	Last analog input number to read 1…max.; the maximum depends on the device and extention devices; e.g. e.g. EASY-E4-DC-6AE1 has a maximum analog outputs of 2. For more information see easySoft 7 Onlinehelp.

Call example

```
/api/get/data?elm=AO(9,16)
```

Response body example


```
{
 "OPERANDS": {
  "AORANGE": [{
    "START": 9,
    "END": 16,
    "V": "AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA="
   }
  ]
 }
}
```


Response Parameter

Each operand returns for every analog input or analog output an array of the following parameters :

START	INT Range start
END	INT Range end
V	BASE64STRING: Operand's value, if no error occurs. For more information see How to convert BASE64STRINGs.
ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

Read AO All

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

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◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Enable read I/O	To read any device inputs or outputs through the JSON API this option must be enabled.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

For more information see easySoft 7 Onlinehelp.

Requested element

AO

Parameters

–

Call example

```
/api/get/data?elm=AO
```

Response body example

```
{
 "OPERANDS": {
  "AOALL": "AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
        AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
        AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
        AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
        AAAAAAAAAAAAAAAAA"
 }
}
```

Response Parameter

Each operand returns for every input or output an array of the following parameters :

AOALL	BASE64STRING: Value of all operands; For more information see How to convert BASE64STRINGs.

ID Diagnostics

Read IDSingle

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

For more information see easySoft 7 Onlinehelp.

Requested element

ID (<number>)

Parameters

number	ID number 1…96; For more information see easySoft 7 Onlinehelp. Chapter "Appendix".

Call example

```
/api/get/data?elm=ID(7)
```

Response body example

```
{
 "OPERANDS": {
  "IDSINGLE": [{
    "INDEX": 7,
    "V": 0
   }
  ]
 }
}
```

Response Parameter

Each operand returns for every input, output, marker or ID an array of the following parameters :

INDEX	Number of the operand; start counting with 1;
V	Operand's value, if no error occurs. Operand's datatyp depends on firmware version FW: FW ≥ 1.20: INTEGER FW ≤ 1.10: BASE64STRING For more information see How to convert BASE64STRINGs.
ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

Read ID Range

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

For more information see easySoft 7 Onlinehelp.

Requested element

ID(<range start>,<range end>)

Parameters

range start	First ID number to read 1…96;
range end	Last ID number to read 1…96;

For more information see easySoft 7 Onlinehelp.
Chapter "Appendix".

Call example

```
/api/get/data?elm=ID(17,32)
```

Response body example

```
"OPERANDS": {
 "IDRANGE": [{
   "START": 17,
   "END": 32,
   "V": "AAA="
  }
 ]
}
}
```

Response Parameter

Each operand returns for every input, output or ID an array of the following parameters :

START	INT Range start
END	INT Range end
V	BASE64STRING: Operands' value, if no error occurs. For more information see How to convert BASE64STRINGs.
ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

Function Blocks

Read Single Function Block Single Pin

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the

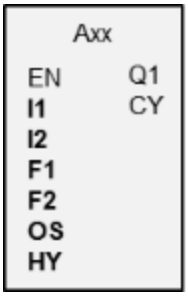
	easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

For more information see easySoft 7 Onlinehelp.

Requested element

FB<FB name><xx> (<Pin type>, <Pin n>)

Parameters



FB name	Name of the function block; e.g. "A" (Analog value comparator)
xx	1…max.; the maximum instance number depends on function block type ; most of them provide 1…32 instances. For more information see easySoft 7 Onlinehelp.
Pin type:	0 - Bit input 1 - Bit output 2 - Word input 3 - Word output
Pin n:	0…max.; count from top to bottom; the maximum pin number depends on the function block and the pin type; e.g. Analog value comparator A1(0,0)=EN; A1(1,0)=Q1; A1(1,1)=CY; A1(2,0)=I1; A1(2,1)=I2; A1(2,2)=F1; A1(2,3)=F2; A1(2,4)=OS; A1(2,5)=HY;

Call example

```
/api/get/adm?elm=FBA1(0;0)
```

Reads function block A, instance number 1, pin type Bit input, first one counted from top to botton (EN)

Response body example

```
{
 "FB": {
  "A": [{
    "INST": 1,
    "TYPE": 0,
    "OFFSET": 0,
    "V": 1
   }
  ]
 }
}
```

Response Parameter

Each function block instance returns for every requested pin an array element of the following parameters :

INST	Instance number of the function block
TYPE	Pin type;

	0 - Bit input 1 - Bit output 2 - Word input 3 - Word output
OFFSET	Pin's number; count from top to bottom, within the selected Pin type, start counting with 0;
V	Pin's value to be set
CALL STATUS	Return value of service call: 0 - Success -1 - Error
ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

Read Single Function Blocks Multiple Pins

admin | user | guest

You can concatenate multiple requests to one API call. URL size is limited to 256 characters.

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

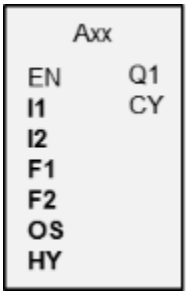
For more information see easySoft 7 Onlinehelp.

Requested element

FB<FBname><xx> (<Pin type>, <Pin n1>)+FB<FBname><xx> (<Pin type>, <Pin n2>)

Parameters

FB name	Name of the function block; e.g. "A" (Analog value comparator)
xx	1…max.; the maximum instance number depends on function block type; most of them provide 1…32 instances. For more information see easySoft 7 Onlinehelp.



Parameters

Pin type:	0 - Bit input 1 - Bit output 2 - Word input 3 - Word output
Pin n1,n2:	0…max.; count from top to bottom; the maximum pin number depends on the function block and the pin type; e.g. Analog value comparator A1(0,0)=EN; A1(1,0)=Q1; A1(1,1)=CY; A1(2,0)=I1; A1(2,1)=I2; A1(2,2)=F1; A1(2,3)=F2; A1(2,4)=OS; A1(2,5)=HY;

Call example

```
/api/get/adm?elm=FBA1(1;1)+FBA1(2;2)
```

Read Function Block A, instance number 1, pin type Bit output, second from top to bottom (CY)

and Function Block A, instance number 1, pin type Word input, third from top to bottom (F1)

Response body example


```
{
"FB": {
  "A": [
       {
    "INST": 1,
    "TYPE": 1,
    "OFFSET": 1,
    "V": 0
   }, {
    "INST": 1,
    "TYPE": 2,
    "OFFSET": 2,
    "V": 100
   }
  ]
 }
}
```


Response Parameter

Each function block instance returns for every requested pin an array element of the following parameters :

INST	Instance number of the function block
TYPE	Pin type; 0 - Bit input 1 - Bit output 2 - Word input 3 - Word output
OFFSET	Pin's number; count from top to bottom, within the selected Pin type, start counting with 0;
V	Pin's value to be set
CALL STATUS	Return value of service call: 0 - Success

	-1 - Error
ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

Read Multiple Function Blocks Multiple Pins

admin | user | guest

You can concatenate multiple requests to one API call. URL size is limited to 256 characters.

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

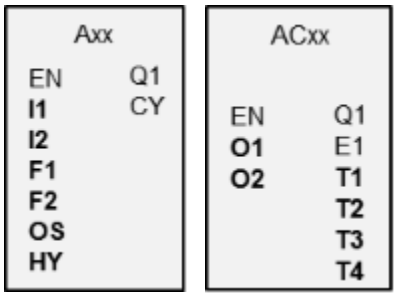
For more information see easySoft 7 Onlinehelp.

Requested element

```
FB<FBname1><xx> (<Pin type>, <Pin n1>)+FB<FBname2><xx> (<Pin type>, <Pin n2>)
```

Parameters

FB name1, FBname2	Name of the function block; e.g. name1 – "A" (Analog value comparator) name2 – "AC" (Astronomical clock)



Parameters

xx	1…max.; the maximum instance number depends on function block type; most of them provide 1…32 instances. For more information see easySoft 7 Onlinehelp.	
Pin type:	0 - Bit input 1 - Bit output 2 - Word input 3 - Word output	
Pin n1,n2:	0…max.; count from top to bottom; the maximum pin number depends on the function block;	
	e.g. Analog value comparator	Astronomical clock
	A1(0,0)=EN; A1(1,0)=Q1; A1(1,1)=CY; A1(2,0)=I1; A1(2,1)=I2; A1(2,2)=F1; A1(2,3)=F2; A1(2,4)=OS; A1(2,5)=HY;	AC2(0,0)=EN AC2(1,0)=Q1 AC2(1,1)=E1 AC2(2,0)=O1 AC2(2,1)=O2 AC2(3,0)=T1 AC2(3,1)=T2 AC2(3,2)=T3 AC2(3,3)=T4

Call example

```
/api/get/adm?elm=FBA1(1;1)+FBAC2(2;0)
```

```
/api/get/data?elm=FBA1(1;1)+FBAC2(2;0)
```

Response body example

```
"FB": {
  "A": [{
    "INST": 1,
    "TYPE": 1,
    "OFFSET": 1,
    "V": 1
   }
  ],
  "AC": [{
    "INST": 33,
    "TYPE": 2,
    "OFFSET": 0,
    "ERROR": 12
   }
  ]
 }
}
}
```

Response Parameter

Each function block instance returns for every requested pin an array element of the following parameters :

INST	Instance number of the function block
TYPE	Pin type; 0 - Bit input 1 - Bit output 2 - Word input 3 - Word output
OFFSET	Pin's number; count from top to bottom, within the selected Pin type, start counting with 0;
V	Pin's value to be set
CALL STATUS	Return value of service call: 0 - Success -1 - Error
ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

Read Function Block AC

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

For more information see easySoft 7 Onlinehelp.

Requested element

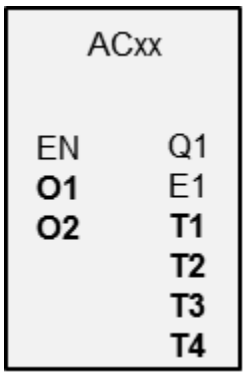
FB<FB name><xx> (<Pin type>, <Pin n>)

Parameters

FB name	Name of the function block; e.g. "A" (Analog value comparator)
xx	1…max.; the maximum instance number depends on function block type ; most of them provide 1…32 instances. For more information see easySoft 7 Onlinehelp.

Parameters

Pin type:	0 - Bit input 1 - Bit output 2 - Word input 3 - Word output
Pin n:	0…max.; count from top to bottom; the maximum pin number depends on the function block and the pin type; e.g. Analog value comparator



Call example

```
/api/get/adm?elm=FBAC1(2;1)
```

Reads function block AC, instance number 1, pin type Word input, second one counted from top to botton (O2)

Response body example

```
{
  "FB": {
    "AC": [{
      "INST": 1,
      "TYPE": 2,
      "OFFSET": 2,
      "TIMEBASE":2,
      "H":2,
      "M":30,
      "S":0,
      "MS":0
      }
    ]
  }
}
```

Response Parameter

Each function block instance returns for every requested pin an array element of the following parameters :

INST	Instance number of the function block
TYPE	Pin type; 0 - Bit input 1 - Bit output 2 - Word input 3 - Word output
OFFSET	Pin's number; count from top to bottom, within the selected Pin type, start counting with 0;
TIMEBASE	Depending on the selected time range in the device's program, the resolution of the time values is different. Resolution of the corresponding Function Block AC: 2: Minutes (always) e.g. in the Response body example seconds (S) and milliseconds(MS) has no value since resolution is minutes.
H	Hours
M	Minutes
S	Seconds
MS	Milliseconds
ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

Read Function Block T

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

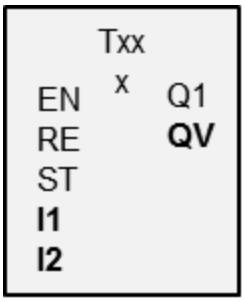
For more information see easySoft 7 Onlinehelp.

Requested element

FB<FB name><xx> (<Pin type>, <Pin n>)

Parameters

FB name	Name of the function block; e.g. "A" (Analog value comparator)
xx	1…max.; the maximum instance number depends on function block type ; most of them provide 1…32 instances. For more information see easySoft 7 Onlinehelp.
Pin type:	0 - Bit input 1 - Bit output 2 - Word input 3 - Word output



Parameters

Pin n:	0…max.; count from top to bottom; the maximum pin number depends on the function block and the pin type; e.g. Analog value comparator T1(0,0)=EN; T1(0,1)=RE; T1(0,2)=ST; T1(2,0)=I1; T1(2,1)=I2; T1(1,0)=Q1; T1(3,0)=QV;

Call example

```
/api/get/adm?elm=FBT1(2;1)
```

Reads function block T, instance number 1, pin type Word input, second one counted from top to botton (I2)

Response body example

```
{
  "FB": {
    "T": [{
      "INST": 1,
      "TYPE": 2,
      "OFFSET": 1,
      "TIMEBASE":1,
      "H":1,
      "M":15,
      "S":34,
      "MS":0
      }
    ]
  }
}
```

Response Parameter

Each function block instance returns for every requested pin an array element of the following parameters :

INST	Instance number of the function block
TYPE	Pin type; 0 - Bit input 1 - Bit output 2 - Word input 3 - Word output
OFFSET	Pin's number; count from top to bottom, within the selected Pin type, start counting with 0;
TIMEBASE	Depending on the selected time range in the device's program, the resolution of the time values is different. Resolution of the corresponding Function Block T: 0: Milliseconds 1: Seconds 2: Minutes e.g. in the Response body example Milliseconds(MS) has no value since resolution is seconds.
H	Hours
M	Minutes
S	Seconds
MS	Milliseconds

ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

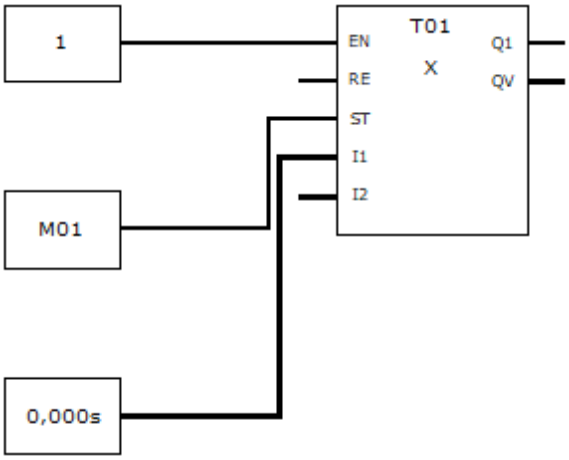
Formal rules for writing FB inputs

Only available on firmware version 1.2 or higher.

You can write Function Block input pins only. You can write to digital and analog Function Block inputs. You can write BIT, WORD Constant or Timer constant.

Timer constant value via API calls is always in milliseconds.

- Digital FB inputs – don't connect!
  If you want to set a digital Function Block input the pin should not be connected in the device's program. For instance you can write the input T01_RE. But you cannot write neither to T01_EN, because it's already set via the constant "1", nor to T01_ST, because of the relation to "M01".
- Analog FB inputs – connect!
  If you want to set an analog Function Block input the pin must be connected in the device's program either to a Constant or to a Timer constant. You cannot write if the input is not related or is related to any other language element, e.g. to a marker word MW.
  For instance you can write the input T01_I1, because it's already defined in the device's program via a Timer constant. But you cannot write T01_I2, because it's not related to any further language element.



Example Function Block T01 in FUP program

Value range for writing analog Function Block inputs

Constant

The value range for constants corresponds to the integer value range and is the same for easySoft 7 and API calls. Some FBs have a restricted value range at its inputs.

For more information see easySoft 7 Onlinehelp.

Timer constant

Different to easySoft 7 the API call for writing a Timer constant to an analog Function Block input is independ of the selected Time range. Time range will be adapted automatically. Timer constant value via API calls is always in milliseconds. Therefore the value range for Timer constants in API calls are different to easySoft 7.

Example

Writing a delay time of 10 hours 20 minutes to the function Block T01 projected Timer constant at T01_I1. Convert the hours into milliseconds.

value = 10 h • 60 min • 60 sec + 20 min • 60 sec = 37200sec = 37 200 000ms

Insert the value 37200000 to API call.

FB value range

FB analog input	API call [ms]	easySoft 7
	Timer Constant	
AC_O1 AC_O1	-43 200 000…+43 200 000	-720…+720 minutes
T_I1 T_I2	1…359.940.000	S: 1…999995 seconds

1) Check FBs value range restrictions

~~FB analog input~~	API call [ms]	easySoft 7
		M:S: 0:1… 99:59
		H:M: 0:1… 99:59
	Constant	
others	-2147483648 …+2147483647	

1) Check FBs value range restrictions

Write Single Function Block Single Pin

Only available on firmware version 1.2 or higher.

admin | user |guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.
Rights: Read and write	To grant write access to the easyE4 base device for user the Read and write permission for the user must be selected.
☑ Parameters	To read and write the status or value of function block inputs or outputs from the JSON API, this option must be enabled.

For more information see easySoft 7 Onlinehelp.

Call

/api/set/par?op=FB&v1=<FB name><xx>(<Pin type>; <Pin n>;<value>)

Parameters

FB name	Name of the function block; e.g. "A" (Analog value comparator)
xx	Addressed function block instance; 1…max.; the maximum instance number depends on function block type; most of them provide 1… 32 instances. For more information see easySoft 7 Onlinehelp.
Pin type:	0 - Bit input 2 - Word input
Pin n:	0…max.; count from top to bottom; the maximum pin number depends on the function block and the pin type;

Parameters

value	Pin's value to be set; value range depends on pin type: Pin type 0: value range=0…1 Pin type 2: value range, see Value range for writing analog Function Block inputs

Call example 1

```
/api/set/par?op=FB&v1=C1(2;1;698741)
```

Response body example 1

```
[{
   "C1(2;1;698741)": 0,
   "SUCCESS": 0
}]
```

Call example 2

```
/api/set/par?op=FB&v1=C1(2;0;;687)
```

Response body example 2

```
[{
  "C1(2;0;;687)", -1
  "ERROR": 37
 }]
```

Response Parameter

Each function block instance returns for every requested pin an array element of the following parameters :

FB	Name of the function block
INST	Instance number of the function block
TYPE	Pin type; 0 - Bit input 2 - Word input
OFFSET	Pin's number; count from top to bottom, within the selected Pin type, start counting with 0;
V	Pin's value to be set
CALL STATUS	Return value of service call: 0 - Success -1 - Error
SUCCESS	easyE4 operand values successful set
ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

Write Multiple Function Blocks Multiple Pins

Only available on firmware version 1.2 or higher.

You can concatenate up to 7 parameters to one API call.

admin | user |guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program.

	Therefore all AL alarm function blocks will be read before the web server is started.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.
Rights: Read and write	To grant write access to the easyE4 base device for user the Read and write permission for the user must be selected.
☑ Parameters	To read and write the status or value of function block inputs or outputs from the JSON API, this option must be enabled.

For more information see easySoft 7 Onlinehelp.

Call

/api/set/par?op=FB&v1=<FB name><xx>(<Pin type>; <Pin n>; <value>)&
v2=<FB name><xx>(<Pin type> ;<Pin n>; <value>)&
…
v7=<FB name><xx>(<Pin type> ;<Pin n>; <value>)

Parameters

FB name	Name of the function block; e.g. "A" (Analog value comparator)
xx	Addressed function block instance; 1…max.; the maximum instance number depends on function block type; most of them provide 1… 32 instances. For more information see easySoft 7 Onlinehelp.
Pin type:	0 - Bit input 2 - Word input
Pin n1,n2:	0…max.; count from top to bottom; the maximum pin number depends on the function block and the pin type; e.g. Analog value comparator A1(0,0)=EN; A1(1,0)=Q1; A1(1,1)=CY; A1(2,0)=I1; A1(2,1)=I2; A1(2,2)=F1; A1(2,3)=F2; A1(2,4)=OS; A1(2,5)=HY;
value	Pin's value; value range depends on pin type: Pin type 0: value range=0…1 Pin type 2: value range, see Value range for writing analog Function Block inputs

Call example

```
/api/set/par?op=FB&v1=C1(2;0;20)&v2=C1(2;1;10)&v3=T1(2;0;2000)&v4=T1(2;1;2000)
&v5=AC1(2;0;7200000)&v6=AC1(2;1;1000)&v7=T1(0;0;1)
```

Response body example


```
[{
  "C1(2;0;20)": 0,
"SUCCESS": 0
},      {
"C1(2;1;10)": 0,
"SUCCESS": 0
},      {
"T1(2;0;2000)": 0,
"SUCCESS": 0
},      {
"T1(2;1;2000)": 0,
"SUCCESS": 0
},      {
"AC1(2;0;7200000)": 0,
"SUCCESS": 0
},      {
"AC1(2;1;1000)": 0,
"SUCCESS": 0
},      {
"T1(0;0;1)": 0,
"SUCCESS": 0
}
]
```


Response Parameter

Each function block instance returns for every requested pin an array element of the following parameters :

FB	Name of the function block
INST	Instance number of the function block
TYPE	Pin type; 0 - Bit input 2 - Word input
OFFSET	Pin's number; count from top to bottom, within the selected Pin type, start counting with 0;
V	Pin's value to be set
CALL STATUS	Return value of service call: 0 - Success -1 - Error
SUCCESS	easyE4 operand values successful set
ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

Write Example Function Block AC

Only available on firmware version 1.2 or higher.

admin | user |guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program.

	Therefore all AL alarm function blocks will be read before the web server is started.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.
Rights: Read and write	To grant write access to the easyE4 base device for user the Read and write permission for the user must be selected.
☑ Parameters	To read and write the status or value of function block inputs or outputs from the JSON API, this option must be enabled.

For more information see easySoft 7 Onlinehelp.

Call

/api/set/par?op=FB&v1=<FB name><xx>(<Pin type>; <Pin n>;<value>)

Parameters

FB name	Name of the function block; e.g. "A" (Analog value comparator)
xx	Addressed function block instance; 1…max.; the maximum instance number depends on function block type; most of them provide 1… 32 instances. For more information see easySoft 7 Onlinehelp.
Pin type:	0 - Bit input 2 - Word input
Pin n:	0…max.; count from top to bottom; the maximum pin number depends on the function block and the pin type;
value	Pin's value; value range depends on pin type: Pin type 0: value range=0…1 Pin type 2: value range, see Value range for writing analog Function Block inputs

Call example

```
/api/set/par?op=FB&v1=AC1(2;0;37200000)
```

Response body example 1

```
[ {
   "AC1(2;0;37200000)": 0,
   "SUCCESS": 0
}
]
```

Response Parameter

Each function block instance returns for every requested pin an array element of the following parameters :

FB	Name of the function block
INST	Instance number of the function block
TYPE	Pin type; 0 - Bit input 2 - Word input
OFFSET	Pin's number;

	count from top to bottom, within the selected Pin type, start counting with 0;
V	Pin's value to be set
CALL STATUS	Return value of service call: 0 - Success -1 - Error
SUCCESS	easyE4 operand values successful set
ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

Write Example Function Block T

Only available on firmware version 1.2 or higher.

admin | user |guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.
Rights: Read and write	To grant write access to the easyE4 base device for user the Read and write permission for the user must be selected.
☑ Parameters	To read and write the status or value of function block inputs or outputs from the JSON API, this option must be enabled.

For more information see easySoft 7 Onlinehelp.

Call

/api/set/par?op=FB&v1=<FB name><xx>(<Pin type>; <Pin n>;<value>)

Parameters

FB name	Name of the function block; e.g. "A" (Analog value comparator)
xx	Addressed function block instance; 1…max.; the maximum instance number depends on function block type; most of them provide 1… 32 instances. For more information see easySoft 7 Onlinehelp.
Pin type:	0 - Bit input 2 - Word input
Pin n:	0…max.; count from top to bottom; the maximum pin number depends on the function block and the pin type;

Parameters

value	Pin's value; value range depends on pin type: Pin type 0: value range=0…1 Pin type 2: value range, see Value range for writing analog Function Block inputs

Call example

```
/api/set/par?op=FB&v1=T1(2;0;2000)
```

Response body example 1

```
[ {
   "T1(2;0;2000)": 0,
   "SUCCESS": 0
}
]
```

Response Parameter

Each function block instance returns for every requested pin an array element of the following parameters :

FB	Name of the function block
INST	Instance number of the function block
TYPE	Pin type; 0 - Bit input 2 - Word input
OFFSET	Pin's number; count from top to bottom, within the selected Pin type, start counting with 0;
V	Pin's value to be set
CALL STATUS	Return value of service call: 0 - Success -1 - Error
SUCCESS	easyE4 operand values successful set
ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

Save All FB Changes

Only available on firmware version 1.2 or higher.

admin | user |guest

The motivation for this API call is the saving of all changed Function Block parameters, after the desired operating status of a system is ensured by fine adjustment of these parameters.

All changes to function block parameters initiated by all web services since the last start of the easyE4 basic device will be persistently transferred to the device. Web services means both – web clients and JSON API calls.

Only values of analog constants and timer constants are accepted.

Changes that originate from other web clients and have taken place over several sessions are also accepted. The constants changed in this way are immediately available in the device and are retained the next time the device is started.

Preconditions

Device operating mode must be **STOP** .

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.
Rights: Read and write	To grant write access to the easyE4 base device for user the Read and write permission for the user must be selected.

For more information see easySoft 7 Onlinehelp.

Call

/api/set/par?op=SAVE

...

Parameters

operand	static "SAVE"

Call example

```
/api/set/par?op=SAVE
```

Response body example

```
"SUCCESS"
```

Response Parameter

Each function block instance returns for every requested pin an array element of the following parameters :

SUCCESS	easyE4 operand values successful set
ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

Marker

Marker Bit M

Read M Single

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the

	easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.
Rights: Read	The Read or the Read and write permission for the user could be selected.

For more information see easySoft 7 Onlinehelp.

Requested element

M(<number>)

Parameters

number	Adressed marker M within range 1… 512.

Call example

```
/api/get/data?elm=M(511)
```

Response body example

```
{
 "OPERANDS": {
  "MSINGLE": [{
    "INDEX": 511,
    "V": 0
   }
  ]
 }
}
```

Response Parameter

Each operand returns for every input, output, marker or ID an array of the following parameters :

INDEX	Number of the operand; start counting with 1;
V	Operand's value, if no error occurs. Operand's datatyp depends on firmware version FW: FW ≥ 1.20: INTEGER FW ≤ 1.10: BASE64STRING For more information see How to convert BASE64STRINGs.
ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

Read M Range

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled;

	either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for `guest` users, this option must be enabled. For other users see description below.
User name: `testuser`	To grant read access to the easyE4 base device for `user`, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.
Rights: `Read`	The `Read` or the `Read and write` permission for the user could be selected.

For more information see easySoft 7 Onlinehelp.

Requested element

M(<range start>,<range end>)

Parameters

range start	First marker M to read 1… 512;
range end	Last marker M to read 1…512;

Call example

```
/api/get/data?elm=M(1,32)
```

Response body example

```
{
 "OPERANDS": {
  "MRANGE": [{
    "START": 1,
    "END": 32,
    "V": "AAAAAA=="
   }
  ]
 }
}
```

Response Parameter

Each operand returns for every input, output, Marker and I,D an array of the following parameters :

START	INT Range start
END	INT Range end
V	BASE64STRING: Operand's value, if no error occurs. For more information see How to convert BASE64STRINGs.
ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

Read M All

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for `guest` users, this option must be enabled. For other users see description below.
User name: `testuser`	To grant read access to the easyE4 base device for `user`, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.
Rights: `Read`	The `Read` or the `Read and write` permission for the user could be selected.

For more information see easySoft 7 Onlinehelp.

Requested element

M

Parameters

–

Call example

```
/api/get/data?elm=M
```

Response body example

```
{
 "OPERANDS": {
  "MALL": "AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
        AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA=="
 }
}
```

Response Parameter

Each operand returns for every input, output, marker and ID an array of the following parameters :

MALL	BASE64STRING: Value of all operands. For more information see How to convert BASE64STRINGs.

Write M Single

`admin` | `user` |guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
Enable marker (write) From MW01 To MW512	To write a marker through the JSON API, the marker must be within the enabled marker range. The enabled range will apply to the administrator and to all defined users equally.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.
Rights: Read and write	To grant write access to the easyE4 base device for user the Read and write permission for the user must be selected.

For more information see easySoft 7 Onlinehelp.

Call

/api/set/op?op=M&index=<number>&val=<value>

Parameters

number	Adressed marker M within range 1…512
value	Adressed marker's integer value

Call example

```
/api/set/op?op=M&index=1&val=1
```

Response body empty

–

Marker Byte MB

Read MB Single

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled;

	either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for `guest` users, this option must be enabled. For other users see description below.
User name: `testuser`	To grant read access to the easyE4 base device for `user`, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.
Rights: `Read`	The `Read` or the `Read and write` permission for the user could be selected.

For more information see easySoft 7 Onlinehelp.

Requested element

MB(<number>)

Parameters

number	Adressed marker byte MB within range 1… 512.

Call example

```
/api/get/data?elm=MB(5)
```

Response body example

```
{
 "OPERANDS": {
  "MBSINGLE": [{
    "INDEX": 5,
    "V": 42
   }
  ]
 }
}
```

Response Parameter

Each operand returns for every input, output, marker or ID an array of the following parameters :

INDEX	Number of the operand; start counting with 1;
V	Operand's value, if no error occurs. Operand's datatyp depends on firmware version FW: FW ≥ 1.20: INTEGER FW ≤ 1.10: BASE64STRING For more information see How to convert BASE64STRINGs.
ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

Read MB Range

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.
Rights: Read	The Read or the Read and write permission for the user could be selected.

For more information see easySoft 7 Onlinehelp.

Requested element

MB(<range start>,<range end>)

Parameters

range start	First marker byte MB to read 1…512;
range end	Last marker byte MB to read 1…512;

Call example

```
/api/get/data?elm=MB(1,8)
```

Response body example

```
{
 "OPERANDS": {
  "MBRANGE": [{
    "START": 1,
    "END": 8,
    "V": "AAAAAAAAAAA="
   }
  ]
 }
}
```

Response Parameter

Each operand returns for every input, output, Marker and I,D an array of the following parameters :

START	INT Range start
END	INT Range end

V	BASE64STRING: Operand's value, if no error occurs. For more information see How to convert BASE64STRINGs.
ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

Write MB Single

admin | user |guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
Enable marker (write) From MW01 To MW512	To write a marker through the JSON API, the marker must be within the enabled marker range. The enabled range will apply to the administrator and to all defined users equally.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.
Rights: Read and write	To grant write access to the easyE4 base device for user the Read and write permission for the user must be selected.

For more information see easySoft 7 Onlinehelp.

Call

/api/set/op?op=MB&index=<number>&val=<value>

Parameters

number	Adressed marker byte MB within range 1… 512.
value	Adressed marker byte's integer value.

Call example

```
/api/set/op?op=MB&index=1&val=4
```

Response body empty

–

Marker Word MW

Read MW Single

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.
Rights: Read	The Read or the Read and write permission for the user could be selected.

For more information see easySoft 7 Onlinehelp.

Requested element

MW(<number>)

Parameters

number	Adressed marker word MW within range 1…512.

Call example

```
/api/get/data?elm=MW(5)
```

Response body example

```
{
 "OPERANDS": {
  "MWSINGLE": [{
    "INDEX": 5,
    "V": 42
   }
  ]
 }
}
```

Response Parameter

Each operand returns for every input, output, marker or ID an array of the following parameters :

INDEX	Number of the operand; start counting with 1;
V	Operand's value, if no error occurs.

	Operand's datatyp depends on firmware version FW: FW ≥ 1.20: INTEGER FW ≤ 1.10: BASE64STRING For more information see How to convert BASE64STRINGs.
ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

Read MW Range

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.
Rights: Read	The Read or the Read and write permission for the user could be selected.

For more information see easySoft 7 Onlinehelp.

Requested element

MW(<range start>,<range end>)

Parameters

range start	First marker word MW to read 1…512.
range end	Last marker word MW to read 1…512.

Call example

```
/api/get/data?elm=MW(1,8)
```

Response body example

```
{
 "OPERANDS": {
  "MWRANGE": [{
    "START": 1,
    "END": 8,
    "V": "AAAAAAAAAAAAAAAAAAAAAA=="
```

```
    }
   ]
  }
 }
```

Response Parameter

Each operand returns for every input, output, Marker and I,D an array of the following parameters :

START	INT Range start
END	INT Range end
V	BASE64STRING: Operand's value, if no error occurs. For more information see How to convert BASE64STRINGs.
ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

Write MW Single

admin | user |guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
Enable marker (write) From MW01 To MW512	To write a marker through the JSON API, the marker must be within the enabled marker range. The enabled range will apply to the administrator and to all defined users equally.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.
Rights: Read and write	To grant write access to the easyE4 base device for user the Read and write permission for the user must be selected.

For more information see easySoft 7 Onlinehelp.

Call

/api/set/op?op=MW&index=<number>&val=<value>

Parameters

number	Adressed marker word MW within range 1… 512.

Parameters

value	Adressed marker word's integer value

Call example

```
/api/set/op?op=MW&index=1&val=10
```

Response body empty

–

Marker Double Word MD

Read MD Single

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.
Rights: Read	The Read or the Read and write permission for the user could be selected.

For more information see easySoft 7 Onlinehelp.

Requested element

MD(<number>)

Parameters

number	Adressed marker double word MD within range 1…256.

Call example

```
/api/get/data?elm=MD(8)
```

Response body example

```
{
 "OPERANDS": {
  "MDSINGLE": [{
    "INDEX": 8,
```

```
      "V": 42
    }
   ]
  }
 }
```

Response Parameter

Each operand returns for every input, output, marker or ID an array of the following parameters :

INDEX	Number of the operand; start counting with 1;
V	Operand's value, if no error occurs. Operand's datatyp depends on firmware version FW: FW ≥ 1.20: INTEGER FW ≤ 1.10: BASE64STRING For more information see How to convert BASE64STRINGs.
ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

Read MD Range

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.
Rights: Read	The Read or the Read and write permission for the user could be selected.

For more information see easySoft 7 Onlinehelp.

Requested element

MD(<range start>,<range end>)

Parameters

range start	First marker double word MD to read 1…256.
range end	Last marker double word MD to read 1…256.

Call example

```
/api/get/data?elm=MD(9,16)
```

Response body example

```
{
 "OPERANDS": {
  "MDRANGE": [{
    "START": 9,
    "END": 16,
    "V": "AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA="
   }
  ]
 }
}
```

Response Parameter

Each operand returns for every input, output, Marker and I,D an array of the following parameters :

START	INT Range start
END	INT Range end
V	BASE64STRING: Operand's value, if no error occurs. For more information see How to convert BASE64STRINGs.
ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

Write MD Single

admin | user |guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
Enable marker (write) From MW01 To MW512	To write a marker through the JSON API, the marker must be within the enabled marker range. The enabled range will apply to the administrator and to all defined users equally.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.
Rights: Read and write	To grant write access to the easyE4 base device for user the Read and write permission for the user must

be selected.

For more information see easySoft 7 Onlinehelp.

Call

/api/set/op?op=MD&index=<number>&val=<value>

Parameters

number	Adressed marker double word MD within range 1… 256.
value	Adressed marker double word's integer value

Call example

```
/api/set/op?op=MD&index=1&val=20
```

Response body empty

–

NET Marker

NET Marker N

Read N Single

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.
Rights: Read	The Read or the Read and write permission for the user could be selected.

For more information see easySoft 7 Onlinehelp.

Requested element

N(<netID >,<number>)

Parameters

Parameters

netID	NET-ID; 0: Current easyE4 base device on which program is running. 1…8: Another specific easyE4 base device within the NET group.
number	Adressed NET marker N within range 1…512.

Call example

```
/api/get/data?elm=N(4;212)
```

Response body example

```
"OPERANDS":
{
   "NSINGLE":
    [{
        "ID":4,
         "INDEX":212,
         "V":0
     }]
}
```

Response Parameter

Each operand returns for every input, output, marker or ID an array of the following parameters :

ID	NET-ID; 0: Current easyE4 base device on which program is running. 1…8: Another specific easyE4 base device within the NET group.
INDEX	Number of the NET operand; start counting with 1.
V	Operand's value, if no error occurs. Operand's datatyp depends on firmware version FW: FW ≥ 1.20: INTEGER FW ≤ 1.10: BASE64STRING For more information see How to convert BASE64STRINGs.
ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

Read N Range

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest

	users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.
Rights: Read	The Read or the Read and write permission for the user could be selected.

For more information see easySoft 7 Onlinehelp.

Requested element

N(<netID>;<range start>,<range end>)

Parameters

netID	NET-ID; 0: Current easyE4 base device on which program is running. 1…8: Another specific easyE4 base device within the NET group.
range start	First NET marker N to read 1…512.
range end	Last NET marker N to read 1…512.

Call example

```
/api/get/data?elm=N(1;1,32)
```

Response body example

```
“OPERANDS":
{
  "NRANGE":
   [{
      "ID":1,
      "START":1,
      "END":32,
      "V":"AAAAAA=="
   }]
}
```

Response Parameter

Each operand returns for every input, output, Marker and ID an array of the following parameters :

ID	NET-ID; 0: Current easyE4 base device on which program is running. 1…8: Another specific easyE4 base device within the NET group.
START	INT Range start.
END	INT Range end.
V	BASE64STRING: Operand's value, if no error occurs. For more information see How to convert BASE64STRINGs.
ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

Write N Single

admin | user |guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
Enable NET marker (write) From NW01 To NW32	To write a NET marker through the JSON API, the NET marker must be within the enabled Net marker range. The enabled range will apply to the administrator and to all defined users equally.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two additional users can be set up.
Rights: Read and write	To grant write access to the easyE4 base device for user the Read and write permission for the user must be selected.

For more information see easySoft 7 Onlinehelp.

Call

/api/set/op?op=N&index=<number>&netID=<netID>&val=<value>

Parameters

number	Adressed NET marker N within range 1…512.
netID	NET-ID; 0: Current easyE4 base device on which program is running. 1…8: Another specific easyE4 base device within the NET group.
value	Adressed NET marker's integer value.

Call example

```
/api/set/op?op=N&index=1&netid=0&val=1
```

Response body empty

–

NET Byte Marker NB

Read NB Single

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.
Rights: Read	The Read or the Read and write permission for the user could be selected.

For more information see easySoft 7 Onlinehelp.

Requested element

NB(<netID>;<number>)

Parameters

number	Adressed NET marker byte NB within range 1…64.
netID	NET-ID; 0: Current easyE4 base device on which program is running. 1…8: Another specific easyE4 base device within the NET group.

Call example

```
/api/get/data?elm=NB(1;4)
```

Response body example

```
{
 "OPERANDS": {
  "NBSINGLE": [{
    "ID": 1,
    "INDEX": 4,
    "V": 42
   }
  ]
 }
}
```

Response Parameter

Each operand returns for every input, output, marker or ID an array of the following parameters :

ID	NET-ID; 0: Current easyE4 base device on which program is running. 1…8: Another specific easyE4 base device within the NET group.
INDEX	Number of the NET operand; start counting with 1.
V	Operand's value, if no error occurs. Operand's datatyp depends on firmware version FW: FW ≥ 1.20: INTEGER FW ≤ 1.10: BASE64STRING For more information see How to convert BASE64STRINGs.
ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

Read NB Range

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.
Rights: Read	The Read or the Read and write permission for the user could be selected.

For more information see easySoft 7 Onlinehelp.

Requested element

NB(<netID>;<range start>,<range end>)

Parameters

netID	NET-ID; 0: Current easyE4 base device on which program is running. 1…8: Another specific easyE4 base device within the NET group.

Parameters

range start	First NET marker byte NB to read 1…64.
range end	Last NET marker byte NB to read 1…64.

Call example

```
/api/get/data?elm=NB(3;1,8)
```

Response body example

```
{
 "OPERANDS": {
  "NBRANGE": [{
    "ID": 3,
    "START": 1,
    "END": 8,
    "V": "AAAAAAAAAAA="
   }
  ]
 }
}
```

Response Parameter

Each operand returns for every input, output, Marker and ID an array of the following parameters :

ID	NET-ID; 0: Current easyE4 base device on which program is running. 1…8: Another specific easyE4 base device within the NET group.
START	INT Range start.
END	INT Range end.
V	BASE64STRING: Operand's value, if no error occurs. For more information see How to convert BASE64STRINGs.
ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

Write NB Single

admin | user |guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
Enable NET marker (write) From NW01 To NW32	To write a NET marker through the JSON API, the NET marker must be within the enabled Net marker range. The enabled range will apply to the administrator

	and to all defined users equally.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two additional users can be set up.
Rights: Read and write	To grant write access to the easyE4 base device for user the Read and write permission for the user must be selected.

For more information see easySoft 7 Onlinehelp.

Call

/api/set/op?op=NB&index=<number>&netid=<netID>&val=<value>

Parameters

number	Adressed NET marker byte NB within range 1…64.
netID	NET-ID; 0: Current easyE4 base device on which program is running. 1…8: Another specific easyE4 base device within the NET group.
value	Adressed NET marker's integer value.

Call example

```
/api/set/op?op=NB&index=1&netid=0&val=10
```

Response body empty

–

NET Word Marker NW

Read NW Single

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the

	easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.
Rights: Read	The Read or the Read and write permission for the user could be selected.

For more information see easySoft 7 Onlinehelp.

Requested element

NW(<netID>;<number>)

Parameters

netID	NET-ID; 0: Current easyE4 base device on which program is running. 1…8: Another specific easyE4 base device within the NET group.
number	Adressed NET marker word NW within range 1…32.

Call example

```
/api/get/data?elm=NW(1;2)
```

Response body example

```
{
 "OPERANDS": {
  "NWSINGLE": [{
    "ID": 1,
    "INDEX": 2,
    "V": 42
   }
  ]
 }
}
```

Response Parameter

Each operand returns for every input, output, marker or ID an array of the following parameters :

ID	NET-ID; 0: Current easyE4 base device on which program is running. 1…8: Another specific easyE4 base device within the NET group.
INDEX	Number of the NET operand; start counting with 1.
V	Operand's value, if no error occurs. Operand's datatyp depends on firmware version FW: FW ≥ 1.20: INTEGER FW ≤ 1.10: BASE64STRING For more information see How to convert BASE64STRINGs.
ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

Read NW Range

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.
Rights: Read	The Read or the Read and write permission for the user could be selected.

For more information see easySoft 7 Onlinehelp.

Requested element

NW(<netID>;<range start>,<range end>)

Parameters

netID	NET-ID; 0: Current easyE4 base device on which program is running. 1…8: Another specific easyE4 base device within the NET group.
range start	First NET marker word NW to read 1…32.
range end	Last NET marker word NW to read 1…32.

Call example

```
/api/get/data?elm=NW(1;1,8)
```

Response body example

```
{
 "OPERANDS": {
  "NWRANGE": [{
    "ID": 1,
    "START": 1,
    "END": 8,
    "V": "AAAAAAAAAAAAAAAAAAAAAA=="
   }
  ]
 }
}
```

Response Parameter

Each operand returns for every input, output, Marker and ID an array of the following parameters :

ID	NET-ID; 0: Current easyE4 base device on which program is running.

	1…8: Another specific easyE4 base device within the NET group.
START	INT Range start.
END	INT Range end.
V	BASE64STRING: Operand's value, if no error occurs. For more information see How to convert BASE64STRINGs.
ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

Write NW Single

admin | user |guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
Enable NET marker (write) From NW01 To NW32	To write a NET marker through the JSON API, the NET marker must be within the enabled Net marker range. The enabled range will apply to the administrator and to all defined users equally.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two additional users can be set up.
Rights: Read and write	To grant write access to the easyE4 base device for user the Read and write permission for the user must be selected.

For more information see easySoft 7 Onlinehelp.

Call

/api/set/op?op=NW&index=<number>&netid=<netID>&val=<value>

Parameters

number	Adressed NET marker word NW within range 1…32.
netID	NET-ID. 0: Current easyE4 base device on which program is running. 1…8: Another specific easyE4 base device within the NET group.

Parameters

value	Adressed NET marker's integer value.

Call example

```
/api/set/op?op=NW&index=1&netid=0&val=10
```

Response body empty

–

NET Double Word Marker ND

Read ND Single

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.
Rights: Read	The Read or the Read and write permission for the user could be selected.

For more information see easySoft 7 Onlinehelp.

Requested element

ND(<netID>;<number>)

Parameters

netID	NET-ID; 0: Current easyE4 base device on which program is running. 1…8: Another specific easyE4 base device within the NET group.
number	Adressed NET marker double word ND within range 1…16.

Call example

```
/api/get/data?elm=ND(1;3)
```

Response body example

```
{
 "OPERANDS": {
  "NDSINGLE": [{
    "ID": 1,
    "INDEX": 3,
    "V": 42
   }
  ]
 }
}
```

Response Parameter

Each operand returns for every input, output, marker or ID an array of the following parameters :

ID	NET-ID; 0: Current easyE4 base device on which program is running. 1…8: Another specific easyE4 base device within the NET group.
INDEX	Number of the NET operand; start counting with 1.
V	Operand's value, if no error occurs. Operand's datatyp depends on firmware version FW: FW ≥ 1.20: INTEGER FW ≤ 1.10: BASE64STRING For more information see How to convert BASE64STRINGs.
ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

Read ND Range

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.
Rights: Read	The Read or the Read and

write permission for the user could be selected.

For more information see easySoft 7 Onlinehelp.

Requested element

ND(<netID>;<range start>,<range end>)

Parameters

netID	NET-ID; 0: Current easyE4 base device on which program is running. 1…8: Another specific easyE4 base device within the NET group.
range start	First NET marker double word ND to read 1…16;
range end	Last NET marker double word ND to read 1…16;

Call example

```
/api/get/data?elm=ND(1;1,8)
```

Response body example


```
{
 "OPERANDS": {
  "NDRANGE": [{
    "ID": 1,
    "START": 1,
    "END": 8,
    "V": "AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA="
   }
  ]
 }
}
```


Response Parameter

Each operand returns for every input, output, Marker and ID an array of the following parameters :

ID	NET-ID; 0: Current easyE4 base device on which program is running. 1…8: Another specific easyE4 base device within the NET group.
START	INT Range start.
END	INT Range end.
V	BASE64STRING: Operand's value, if no error occurs. For more information see How to convert BASE64STRINGs.
ERROR	Error occured due to improper calling of JSON API. More infomation see API Error Codes.

Write ND Single

admin | user |guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled;

	either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
Enable NET marker (write) From NW01 To NW32	To write a NET marker through the JSON API, the NET marker must be within the enabled Net marker range. The enabled range will apply to the administrator and to all defined users equally.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two additional users can be set up.
Rights: Read and write	To grant write access to the easyE4 base device for user the Read and write permission for the user must be selected.

For more information see easySoft 7 Onlinehelp.

Call

/api/set/op?op=ND&index=<number>&netid=<netID>&val=<value>

Parameters

number	Adressed NET marker double word within range 1…16.
netID	NET-ID; 0: Current easyE4 base device on which program is running. 1…8: Another specific easyE4 base device within the NET group.
value	Adressed NET marker's integer value.

Call example

```
/api/set/op?op=ND&index=1&netid=0&val=10
```

Response body empty

–

DEVICE & COMMUNICATION SETTINGs

Device Properties

Read Firmware Version

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

For more information see easySoft 7 Onlinehelp.

Requested element

VERSION

Parameters

–

Call example

```
/api/get/data?elm=VERSION
```

Response body example

```
"SYSINFO":{
    "VERS":"1.10",
    "BUILD":"206"
}
```

Response Parameter

The device returns for every requested element an array of the following parameters :

VERS	Version of the firmware
BUILD	Build of the firmware

Read Device Language

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled;

	either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

For more information see easySoft 7 Onlinehelp.

Requested element

DEVLANG

Parameters

–

Call example

```
/api/get/data?elm=DEVLANG
```

Response body example

```
"SYSINFO":{
    "DEVLANG":"EN"
}
```

Response Parameter

The device returns for every requested element an array of the following parameters :

DEVLANG	Device's menu language

Read Device Name

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

For more information see easySoft 7 Onlinehelp.

Requested element

DEVNAME

Parameters

–

Call example

```
/api/get/data?elm=DEVNAME
```

Response body example

```
"SYSINFO":{
    "DEVNAME":"easyE4"
}
```

Response Parameter

The device returns for every requested element an array of the following parameters :

DEVNAME	Device's name

Write Device Name

admin | user | guest

Preconditions

Device operating mode must be **STOP** .

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.

For more information see easySoft 7 Onlinehelp.

Call

/api/set/adm?op=<operand>&v1=<new device name>

Parameters

operand	static "devname"
new device name	UTF8 encoded string

Call example

```
/api/set/adm?op=devname&v1=easyE4_2
```

Response body empty

_

Registered HTTP Status code

```
JSON API HTTP Status code
403 Device needs to be set in STOP mode first.
```

Stop the device by using API Call Write Device State

Read Device Location

Only available on firmware version 1.2 or higher.

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

For more information see easySoft 7 Onlinehelp.

Requested element

DEVLOCATION

Parameters

–

Call example

```
/api/get/data?elm=DEVLOCATION
```

Response body example

```
{
 "SYSINFO": {
  "DEVLOCATION": {
   "LONGITUDE": "-7085463",
   "LATITUDE": "-50734411"
  }
 }
}
```

Response Parameter

The device returns for every requested element an array of the following parameters.

Divide the returned value by 1000000 to get geographic coordinates for using in route planner.

LONGITUDE 1000000	Decimal value starting from the prime meridian: -180…+180 (West…East)
LATITUDE 1000000	Decimal value starting from the prime meridian: -89,899…+89,899 (South…North)

Device state

Read Device State

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled	One of the following options must be enabled;

○ Activation by program	either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

For more information see easySoft 7 Onlinehelp.

Requested element

STATE

Parameters

–

Call example

```
/api/get/data?elm=STATE
```

Response body example

```
"SYSINFO":{
"STATE":"RUN"
}
```

Response Parameter

The device returns for every requested element an array of the following parameters :

STATE	State of the user program in the device: STOP | RUN

Read Device Extension State

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

For more information see easySoft 7 Onlinehelp.

Requested element

EXTSTATE

Parameters

–

Call example

```
/api/get/data?elm=EXTSTATE
```

Response body example

```
"SYSINFO":{
"EXTSTATE":{
     "EXTDATA":"0",
     "EXTCFG":"1",
     "EXTBUS":"0",
     "EXTCYC":"1"
  }
}
```

Response Parameter

The device returns for every requested element an array of the following parameters :

EXTSTATE	Operand displays the status of SWD-Strang which is responsible for data exchange with extension modules (IOX bus). Below are the description of each fields.
EXTDATA	Shows whether the data exchange is running: 0 or 1.
EXTCFG	Shows the state of the state machine as a number.
EXTBUS	Shows the state of the expansion bus; is shown as a number. 0: No stations 1: OK 2: At least one optional station missing 3: At least one mandatory station missing
EXTCYC	The current cycle time is given in ms.

Write Device State

admin | user |guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.
☑ Mode	This option must be enabled to change the operating mode for the easyE4 base device using JSON API by user. admin always has the permission, guest never.

For more information see easySoft 7 Onlinehelp.

Call

/api/set/mode?op=<operand>&v1=<new device mode>

Parameters

operand	static "state"
new device mode	static STOP or RUN

Call example

```
/api/set/mode?op=state&v1=STOP
/api/set/mode?op=state&v1=RUN
```

Response body empty

–

Read Device Diagnosis

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

For more information see easySoft 7 Onlinehelp.

Requested element

DIAG

Parameters

–

Call example

```
/api/get/data?elm=DIAG
```

Response body example


```
"SYSINFO":{
"DIAG_CNT":"10","DIAG_TIME":"13770","DIAG_LIST":[
{
   "DIAG":"0",
   "CNT":"1",
   "TIME":"10",
   "MOD":"196",
   "CODE":"67",
   "DID":"0x1F"
},
{   "DIAG":"1",
    "CNT":"2",
    "TIME":"2995",
    "MOD":"196",
    "CODE":"65",
    "DID":"0x1F"
},
```

```
{   "DIAG":"2",
    "CNT":"3",
    "TIME":"2995",
    "MOD":"196",
    "CODE":"67",
    "DID":"0x1F"
},
{   "DIAG":"3",
    "CNT":"4",
    "TIME":"3004",
    "MOD":"196",
    "CODE":"65",
    "DID":"0x1F"
},
{   "DIAG":"4",
    "CNT":"5",
    "TIME":"3005",
    "MOD":"196",
    "CODE":"67",
    "DID":"0x1F"
},
{   "DIAG":"5",
    "CNT":"6",
    "TIME":"3013",
    "MOD":"196",
    "CODE":"89",
    "DID":"0x1F"
},
{   "DIAG":"6",
    "CNT":"7",
    "TIME":"5113",
   "MOD":"196",
    "CODE":"90",
    "DID":"0x1F"
},
{   "DIAG":"7",
    "CNT":"8",
    "TIME":"5116",
    "MOD":"196",
    "CODE":"65",
    "DID":"0x1F"
},
 {  "DIAG":"8",
    "CNT":"9",
    "TIME":"5116",
    "MOD":"196",
    "CODE":"67",
    "DID":"0x1F"
},
{   "DIAG":"9",
    "CNT":"10",
    "TIME":"5120",
    "MOD":"196",
    "CODE":"89",
    "DID":"0x1F"
}
  ]
}
```


Response Parameter

The device returns for every requested element an array of the following parameters :

DIAG_CNT	Total number of device's diagnostic messages
DIAG_TIME	Time elapsed in milliseconds between reading

	diagnosis information via JSON API and start of device .
DIAG	Diagnosis ID; 0…61.
CNT	Count number of diagnostic message; 1…62.
TIME	Time elapsed in seconds between diagnostic message and start of device.
MOD	Address of the expansion module; 0: base module
CODE	Diagnostic Code
DID	For internal use

Device Date&Time

Read Device Date

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

For more information see easySoft 7 Onlinehelp.

Requested element

DATE

Parameters

–

Call example

```
/api/get/data?elm=DATE
```

Response body example

```
"SYSINFO":{
"DATE":"2019-02-25"
}
```

Response Parameter

The device returns for every requested element an array of the following parameters :

DATE	Year, month, day of device's date

Write Device Date

admin | user |guest

Preconditions

Device operating mode must be **STOP** .

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two additional users can be set up.
Rights: Read and write	To grant write access to the easyE4 base device for user the Read and write permission for the user must be selected.
☑ Clock	To modify the device time of the device clock from the JSON API by user, this option must be enabled. admin always has the permission, guest never . → Please be aware, if in easySoft 7 project the option Synchronize clock via SNTP or Synchronize clock via wireless (DCF77) is enabled, the device will get its device time as a client from an SNTP server or from a wireless clock (DCF77). In the process, the time modified via the web client is overwritten again.

For more information see easySoft 7 Onlinehelp.

Call

/api/set/clock?op=<operand>&v1=<year>&v2=<month>&v3=<day>

Parameters

operand	static "date"
year	1…9999
month	1…12

Parameters

day	1…31

Call example

changes device date e.g. to 2019/4/9

```
/api/set/clock?op=date&v1=2019&v2=4&v3=9
```

Response body empty

–

Registered HTTP Status code

```
JSON API HTTP Status code
403 Device needs to be set in STOP mode first.
```

Stop the device by using API Call Write Device State

Read Device Time

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

For more information see easySoft 7 Onlinehelp.

Requested element

```
TIME
```

Parameters

–

Call example

```
/api/get/data?elm=TIME
```

Response body example

```
"SYSINFO":{
    "TIME":"19:56:39"
}
```

Response Parameter

The device returns for every requested element an array of the following parameters :

TIME	Hour, minute, second of device's time

Write Device Time

admin | user |guest

Preconditions

Device operating mode must be **STOP** .

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two additional users can be set up.
Rights: Read and write	To grant write access to the easyE4 base device for user the Read and write permission for the user must be selected.
☑ Clock	To modify the device time of the device clock from the JSON API by user, this option must be enabled. admin always has the permission, guest never . → Please be aware, if in easySoft 7 project the option Synchronize clock via SNTP or Synchronize clock via wireless (DCF77) is enabled, the device will get its device time as a client from an SNTP server or from a wireless clock (DCF77). In the process, the time modified via the web client is overwritten again.

For more information see easySoft 7 Onlinehelp.

Call

/api/set/clock?op=<operand>&v1=<hour>&v2=<minute>&v3=<second>

Parameters

operand	static "time"
hour	1…24
minute	1…60

Parameters

second	1…60

Call example

changes device time e.g. to 12:11:03

```
/api/set/clock?op=time&v1=12&v2=11&v3=3
```

Response body empty

–

Registered HTTP Status code

```
JSON API HTTP Status code
403 Device needs to be set in STOP mode first.
```

Stop the device by using API Call Write Device State

Email

Read Email settings

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.

For more information see easySoft 7 Onlinehelp.

Requested element

```
EMAIL
```

Parameters

–

Call example

```
/api/get/adm?elm=EMAIL
```

Response body example

```
{
 "SYSINFO": {
  "EMAIL": {
   "SMTP_SERVER_FMT": "IP",
   "SMTP_SERVER_IP": "10.235.0.194",
   "SMTP_SERVER_DOMAIN": "",
   "SMTP_SERVER_SECURITY": "Unencrypted",
   "SMTP_USER": "testuser",
   "SMTP_PORT": "25"
  }
 }
}
```

Response Parameter

The device returns for every requested element an array of the following parameters :

SMTP_SERVER_FMT	Format of the mail server defined; IP: If address via IP adress DNS: If addressed with the DNS name (preferably).
SMTP_SERVER_IP	IP adress of the mail server.
SMTP_SERVER_DNS	DNS name of the mail server.
SMTP_SERVER_DOMAIN	The DNS server establishes the connection to the mail server, when using DNS names.
SMTP_SERVER_SECURITY	Security level of the Connection : Unencrypted STARTTLS or SSL/TLS
SMTP_USER	User must be set up with login name and password in easySoft 7 project, register "E-Mail".
SMTP_PORT	Email service port number

For more information see easySoft 7 Onlinehelp.
register "E-Mail" and "Ethernet" tab.

Read Email Group settings

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.

For more information see easySoft 7 Onlinehelp.

Requested element

EMAILGROUPS

Parameters

–

Call example

```
/api/get/adm?elm=EMAILGROUPS
```

Response body example

```
{
 "SYSINFO": {
  "EMAILGROUPS": {
   "EMAIL_ACTGRP": 1,
   "EMAIL_GRP1": "easyE4@eaton.com;easyE4@gmail.com",
   "EMAIL_GRP2": "",
   "EMAIL_GRP3": ""
  }
 }
}
```

Response Parameter

The device returns for every requested element an array of the following parameters :

EMAILGROUPS	
EMAIL_ACTGRP	Number of the activated recipient group 1…3; only one group can be activated at a time.
EMAIL_GRP1	If activated, recipients of the recipient group.
EMAIL_GRP2	If activated, recipients of the recipient group.
EMAIL_GRP3	If activated, recipients of the recipient group.

Communication settings

Read Device IP settings

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

For more information see easySoft 7 Onlinehelp.

Requested element

IPSET

Parameters

–

Call example

```
/api/get/data?elm=IPSET
```

Response body example

```
"SYSINFO":{
"IPSET":{
    "ACTIP":"10.235.0.132",
    "IPMODE":"1",
    "ACTMASK":"0.0.0.0",
    "ACTGW":"0.0.0.0"
  }
}
```

Response Parameter

The device returns for every requested element an array of the following parameters :

ACTIP	Device's current IP adress

For more information see easySoft 7 Onlinehelp.
"Ethernet" tab.

IPMODE	IP address assignment mode 0: Auto-IP 1: DHCP 2: Set IP address
ACTMASK	Device's current subnet mask
ACTGW	IP address of a gateway, which is needed to route protocols such as Modbus TCP

For more information see easySoft 7 Onlinehelp.
"Ethernet" tab.

Write Device IP settings

admin | user | guest

Preconditions

Device operating mode must be **STOP** .

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.

For more information see easySoft 7 Onlinehelp.

Call

/api/set/adm?op=<operand>&v1=<ipmode>&v2=<ipaddress>&v3=<subnet mask>&v4=<gateway>

Parameters

operand	static "ipset"
ipmode	0: Auto-IP 1: DHCP, 2: Set IP address
ipaddress	Device's current IP adress
subnet mask	Device's current subnet mask
gateway	IP address of a gateway, which is needed to route protocols such as Modbus TCP

Call example

```
/api/set/adm?op=ipset&v1=2&v2=10.235.2.244&v3=255.255.255.0&v4=10.235.2.1
```

Response body empty

–

Registered HTTP Status code

```
JSON API HTTP Status code
403 Device needs to be set in STOP mode first.
```

Stop the device by using API Call Write Device State

Read Device NET ID

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

For more information see easySoft 7 Onlinehelp.

Requested element

DEVID

Parameters

–

Call example

```
/api/get/data?elm=DEVID
```

Response body example

```
"SYSINFO":{
    "DEVID":"0"
}
```

Response Parameter

The device returns for every requested element an array of the following parameters :

DEVID	NET ID of the current device within the NET group, 0…7.

Programm settings

Read Program Name

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

For more information see easySoft 7 Onlinehelp.

Requested element

PROGNAME

Parameters

–

Call example

```
/api/get/data?elm=PROGNAME
```

Response body example

```
{
 "SYSINFO": {
  "PROGNAME": "myeasy"
 }
}
```

Response Parameter

The device returns for every requested element an array of the following parameters :

PROGNAME	The device's name; For more information see easySoft 7 Onlinehelp. "Ethernet" tab.

Read Program Cycle time

admin | user | guest

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest users, this option must be enabled. For other users see description below.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

For more information see easySoft 7 Onlinehelp.

Requested element

CYC

Parameters

–

Call example

```
/api/get/data?elm=CYC
```

Response body example

```
Sysinfo":{
"CYC":{
    "CYCMIN":"10032",
    "CYCMAX":"11916",
    "CYCACT":"10047"
```

```
    }
}
```

Response Parameter

The device returns for every requested element an array of the following parameters :

CYCMIN	The shortest measured cycle time since program start in 10^{-6} seconds.
CYCMAX	The largest measured cycle time since program start in 10^{-6} seconds.
CYCACT	The current measured cycle time in 10^{-6} seconds.

MORE

Combination of requests by using the "+"

admin | user | guest

You can concatenate multiple requests to one API call. URL size is limited to 256 characters.

Preconditions

This JSON API call is only available, if the project settings for your easySoft 7 program running on easyE4 are enabled as shown below:

☑ Web server enabled	The web server must be enabled.
◉ Always enabled ○ Activation by program	One of the following options must be enabled; either the web server is always enabled or it is supposed to be activated by a specific program. Therefore all AL alarm function blocks will be read before the web server is started.
☑ Anonymous read access allowed	To grant read access to the easyE4 base device for guest and all other users, this option must be enabled.
User name: testuser	To grant read access to the easyE4 base device for user, an additional user must be set up in addition to the administrator, e.g. "testuser". Two users can be set up.

In addition, further preconditions are necessary depending on the requested elements.

Requested element

```
<requested element1>+<requested element2>…+<requested elementn>
```

It's allowed to combine any operands, function blocks and device settings as requested elements.

Parameters

Call example

```
/api/get/data?elm=I+I(3)+I(5)+I(1,8)+I(1,16)+STATE+IPSET
```

Response body example

```
{
  "SYSINFO": {
     "STATE": "RUN",
     "IPSET": {
             "ACTIP": "10.235.2.182",
             "IPMODE": "1",
             "ACTMASK": "255.255.254.0",
             "ACTGW": "10.235.2.1"
        }
   },
   "OPERANDS": {
        "IRANGE": [{
               "START": 1,
               "END": 32,
               "V": "AAAAAA=="
                   }
         ],
         "OSINGLE": [{
                "INDEX": 5,
```

```
                    "V": "0"
                  }, {
                    "INDEX": 64,
                    "V": "0"
                  }
            ]
      },
      "FB": {
            "AL": [{
                    "INST": 1,
                    "TYPE": 0,
                    "OFFSET": 0,
                    "V": 0
                   }
             ]
      }
}
```


Response parameter

The response parameters is a combination of arrays and objects returned by each requested element.