

# grup ARGE

## 8 Output Module User Manual



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Version 19-2

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### CORRECT USE AND SAFETY CONDITIONS

	<p>Cut all the power when connecting and disconnecting the device to a panel.</p>
	<p>Do not clean the device with a solvent or similar material. Only use a dry cloth.</p>
	<p>Please do not intervene to the device when a technical problem is encountered and get in contact with a technical service within the shortest time.</p>
	<p>If the warnings are not taken into account, our company or the authorized dealer shall not be held responsible for the negative consequences.</p>
	<p>Do not dispose in the trash, the device must be delivered to the collection centers (electronic device recycling centers). It should be recycled or disposed of without harming human health and environment.</p>
	<p>The installation, assembly, activation and operation of the device should be done and used by only expert professionals and in accordance with safety regulations and instructions.</p>
	<p>The device operates with current transformers. Do not strictly leave current transformer tips unattached. Dangerous high voltage can occur.</p>

- **General Features**

- **Introduction**

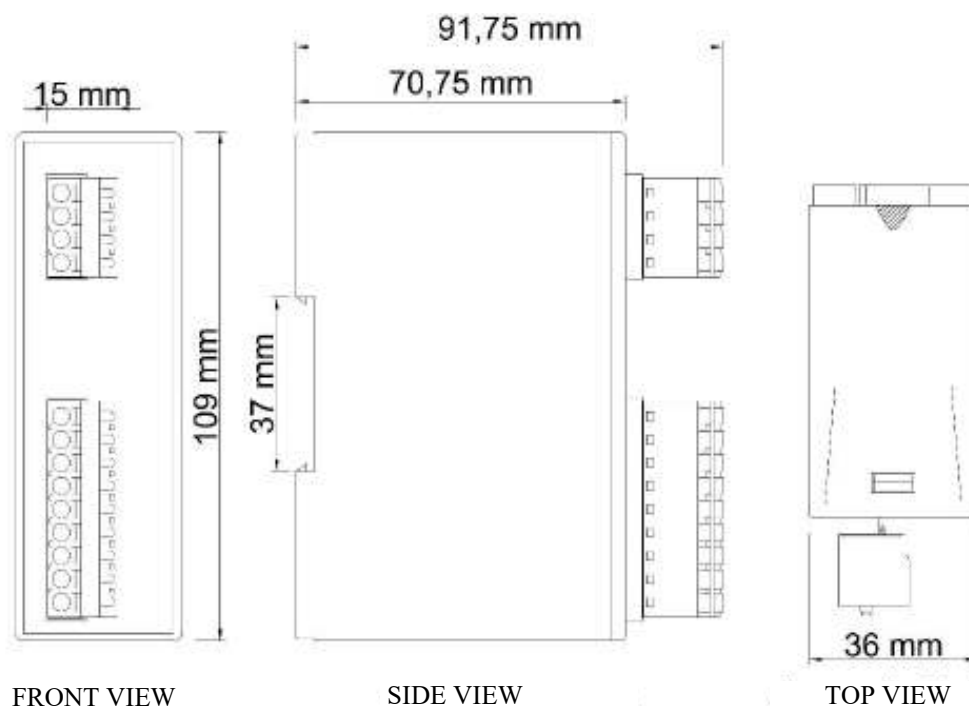
8 relay outputs on the device can be remotely controlled with Standard MODBUS RTU. It can be remotely monitored with SmartPower terminals or integrated into other systems. The COM terminal is the common tip of the relays. When a relay is activated, it outputs the voltage connected to the COM terminal and the voltage output LED lights up. The device can be mounted on the in-panel rail.

- Loads up to 5 Amps can be driven directly from the relay output. If a current of more than 5 Amps is to be drawn, it is necessary to control the load via a contactor. In this case, the relay output is used as the trigger signal of the contactor.

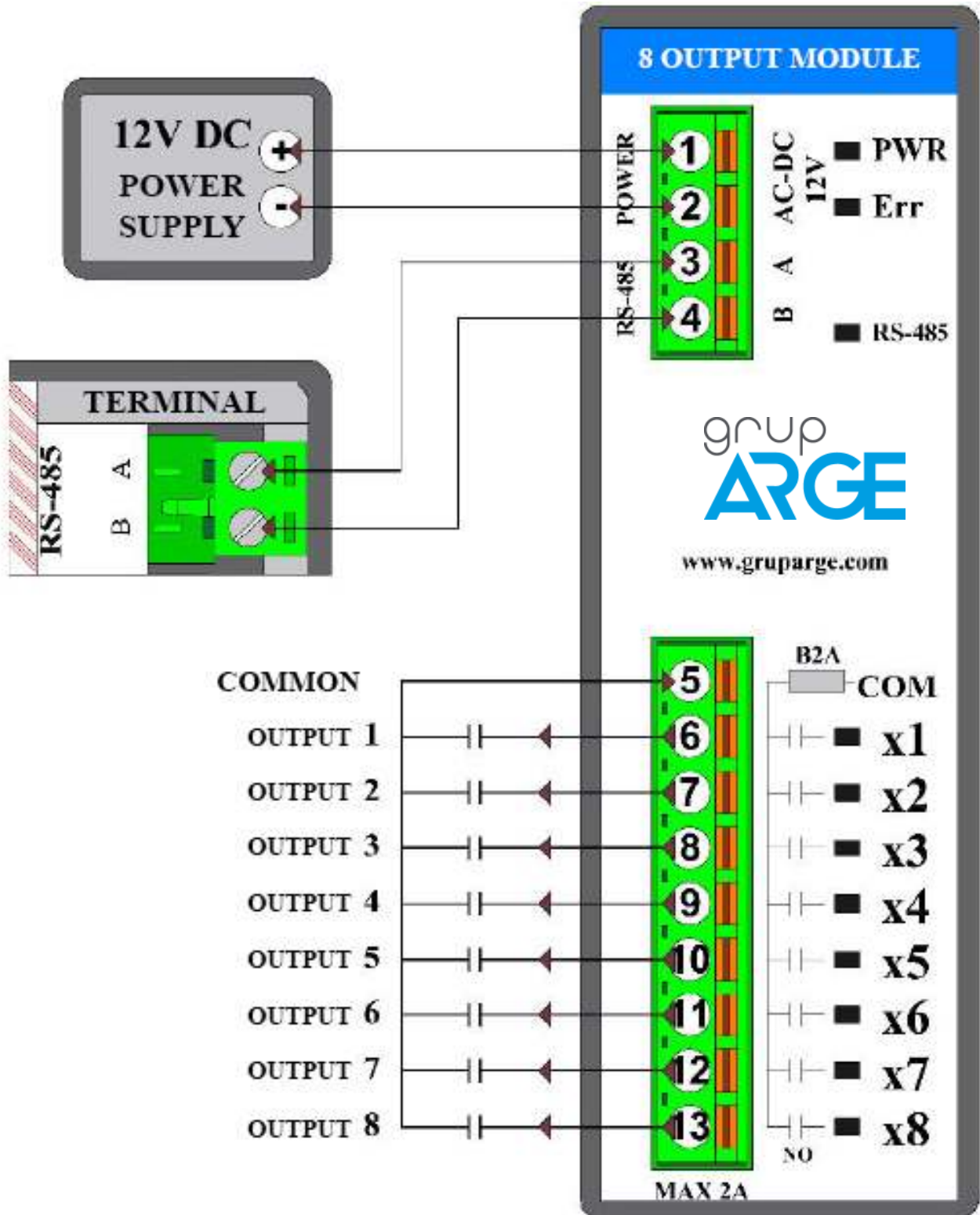
- **Technical Features**

- It is microprocessor based.
- Works with 12 V DC supply.
- Supports RS-485 Standard MODBUS RTU protocol.
- There are 8 relays with a contact output current of 3 A (230 V).
- It has POWER, ERROR, RS-485 (Communication) LEDs..
- The operating ambient temperature of the device is between -10 °C and +55 °C.
- The power consumption is less than 1 VA.
- It has IP40 protection class.

- **Device Dimensions**



- CONNECTION DIAGRAM



- **MODBUS MAP**

- **Communication Parameters**

Baudrate	9600 bps
Data bits	8
Parity	None
Stop bits	1

NOTE: . To obtain the factory default MODBUS address of the device, 100 is added to the 2 numbers at the end of the serial number. For example, suppose the serial number is 185247. Since it ends with 47, the MODBUS address becomes 147.

- **Modbus Map**

GRUP ARGE	Version 02.00	
	Multiplier	Address
Input / Output Module		
Serial number		100
		102
Product (Type, Sub-Type) + Application Vers. (Main, Sub)		
		104
Hardware (0, Type) + Hardware Vers. (Main, Sub)		
Parameter Vers. + System Vers. (Main, Sub)		106
<b>Parameters</b>		
Parameter Version		200
Working Hours		201
MODBUS Address		206
Bus speed		207
Read Protection Bit		208
Write Protection Bit		209
Read Password Confirm		210
Write Password Confirm		211
<b>Device Specific Commands</b>		

Device Restart		1900
Factory Reset		1901

- **Reading Output States**

question (Read Coil 01)				
Device MODBUS Address	Function Code	Starting Input Address	Output Quantity	CRC
1 Bayt Bayt	1 Bayt (01)	2 Bayt Hi-Low	2 Bayt Hi-Low	2

Answer				
Device Specific Commands 1 Bayt Bayt	1 Bayt (01) 2 Bayt	1 Bayt (01)	1 Bayt (01)	1

informations

There are 8 inputs in the module.

Addresses of these login: 1.Entry → 00

- Login → 01
- Login → 02
- Login → 03
- Login → 04
- Login → 05
- Login → 06
- Login → 07

<i>Output 1 is read when a relay is withdraw.</i>
<b>Interpretation of the Answer</b>
When the 1-byte data (4th byte) that gives the output status is analyzed as binary, the highest-order bit (MSB) shows the 8th output, and the lowest-order bit (LSB) shows the 1st output.(LSB) 1.
<b>Example Reading the 4th Output of the Device with Address 01 (if the 4th relay is on)</b>
question: 01 02 00 03 00 01 xx xx
answer: 01 01 01 08 xx xx
<b>Example Reading All Outputs of the Device with Address 01 (1,2,5,8 relays are drawn in)</b>
question: 01 01 00 00 00 08 xx xx
answer: 01 01 01 93 xx xx
<b>"xx xx" in the examples is a 2-byte CRC.</b>

- Reading Outputs One by One**

question (Write Single Coil 05)				
Device MODBUS address	Function Code	Input Address	value to write	CRC
1 Bayt	1 Bayt (05)	2 Bayt Hi- Low	2 Bayt Hi-Low	2 Bayt
answer				
Device MODBUS Address	Function Code	output address	Value to write	CRC

1 Bayt	1 Bayt (05)	2 Bayt Hi-Low	2 Bayt Hi-Low	2 Bayt
<b>Informations</b>				

There are 8 outputs in the module. The addresses of these outputs are:

- Login → 00

- Login → 01
- Login → 02
- Login → 03
- Login → 04
- Login → 05
- Login → 06
- Login → 07

*When a relay is to be drawn, FF 00 is written to the "Value to Write" (5th and 6th bytes).*

*When a relay is to be released, 00 00 is written to the "Value to Write" (5th and 6th bytes).*

**Example Drawing the 4th Output of the Device with Address 01**

question: 01 05 00 03 FF 00 xx xx

answer: 01 05 00 03 FF 00 xx xx

**Example of Device with Address 01 Leaving the 4th Output**

question: 01 05 00 03 00 00 xx xx

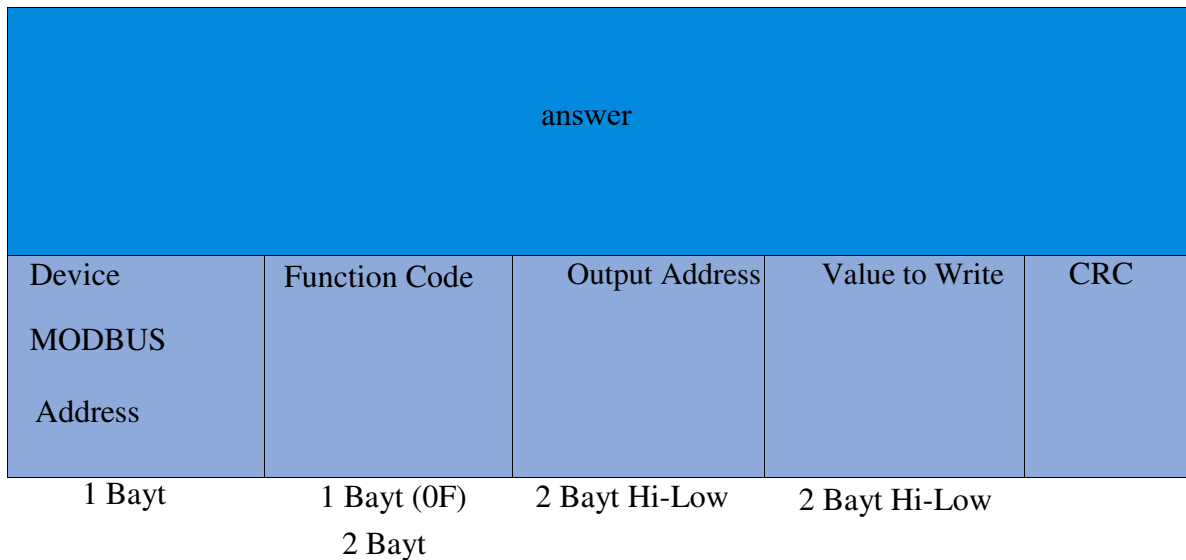
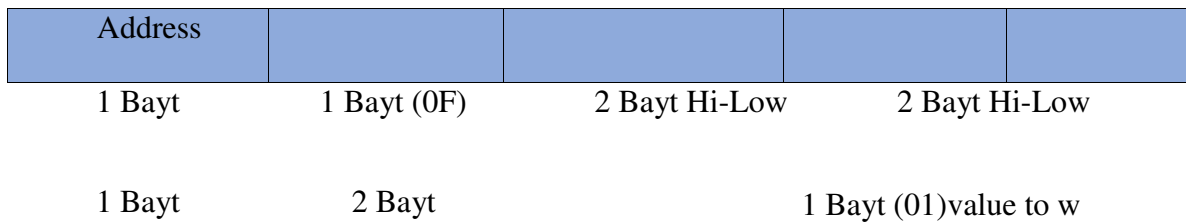
answer: 01 05 00 03 00 00 xx xx

**: "xx xx" in the examples is the 2-byte CRC.**

- NOTE **Multiple Control of Outputs**

question(Write Multiple Coils 0x0F)				
Device	Function Code	Starting Input Address	Output Quantity	Bayt Sayısı
MODBUS				





### Informations

There are 8 outputs in the module.  
Addresses of these outputs: 1.Input→

- Login → 00
- Login → 01
- Login → 02
- Login → 03
- Login → 04
- Login → 05
- Login → 06
- Login → 07

<i>“output Start Address” specifies from which output we will control (00-07).</i>
<i>We determine how many outputs we will control with “Output Quantity”(01-08).</i>
<i>“Value to Write” Each bit of 1-byte data represents an output. MSB 8. LSB is output 1.</i>
<i>The bit of the output we want to draw is 1, and we make 0 what we want to leave.</i>
<b>Example drawing All Outputs of Device with Address 01</b>
question: 01 0F 00 00 00 08 01 FF xx xx
answer: 01 0F 00 00 00 08 xx xx
<b>Example that Leaves All Outputs of the Device with Address 01</b>
question: 01 0F 00 00 00 08 01 00 xx xx
answer: 01 0F 00 00 00 08 xx xx

† NOT : "xx xx xx" in the examples is a 2 byte CRC

