



LABOR – ASTER

INDUSTRIAL AUTOMATION



AC 083
QMS

CONVERTER MODBUS ⇒ ANALOG type As 701

- Input RS485 MODBUS RTU
- Output 8 analog signals
- Rail housing

APPLICATION:

Converter **As 701** is designed to operate in distributed automation systems. Its main application is converting serial digital transmission signal MODBUS RTU to 8 analog signals. Converter operates as a SLAVE unit (it waits for requests from MASTER unit according to the list of transmission frames).

Converter **As 701** is adapter to be mounted in control closets on rail TS35.



BASIC TECHNICAL PARAMETERS:

1. Power supply - 24 V_{DC} ± 10% / 220 mA
2. Input - RS485 MODBUS RTU
Transmission speed - 2400; 4800; 9600;
19200 bd
Data bits - 8
Stop bit - 1
Parity - none
Max amount of units on a bus - 31
3. Transmission cable length - < 1200 m
4. Transmission line separation - optoelectronic >1 kV
5. Programmable parameters - transmission speed, device number
8 x 0(4) ÷ 20 mA with common supply ground
6. Output - 8 x 0(4) ÷ 20 mA with common supply ground
7. Max load resistance - < 750 Ω
8. Class - 0.25 %
9. Accuracy - 0.025 %
10. Max update cycle of output signals - 200ms
11. Working conditions
Ambient temperature - storing: -30°C...+60°C
Ambient temperature - working: -25°C...+60°C
Relative humidity: max 90%, no water vapor condensation
Ambient atmosphere: free from dust and aggressive fumes
12. Vibration - 0.1 mm.
13. Indication of operation state:
power supply - LED1
transmission data - LED2

TRANSMISSION SPEED:

0 – 19200 ; 1 – 9600
2 – 4800 ; 3 – 2400

List of transmitted packages:

- Package 03 - read configuration registers
Package 06 - write configuration registers
Package 16 - write configuration registers of current outputs

List of configuration parameters:

INDEX	SYMBOL	PARAMETER
00	OUT 1	AO 1
01	OUT 2	AO 2
02	OUT 3	AO 3
03	OUT 4	AO 4
04	OUT 5	AO 5
05	OUT 6	AO 6
06	OUT 7	AO 7
07	OUT 8	AO 8
08	REZ	
09	REZ	
10*	Nr S	Device number
11*	BAUD	Transmission speed

*) **NOTE:** Registers 10 and 11 – can be written with package 06
Registers 00...07 – can be written with package 06 or package 16

DATA TRANSMISSION FORM:

CURRENT OUTPUT	DEC	HEX
0 mA	0	0
4 mA	800	320
20 mA	4000	OFAO
20.475 mA	4095	0FFF

Operation after turning on power supply:

After "RESTART" of the device output values are initiated from non-volatile EEPROM memory.
Record to non-volatile BACKUP memory is every 5 minutes.

- connect jumper on output **RES**
- program chosen device number and transmission speed
- disconnect jumper on output **RES**

- device number = 247 (Ø F7 hex)
- transmission speed = 1 (9600b/s)

Technical drawing of the Konverter As 701 showing dimensions and pin configuration.

Dimensions:

- Overall width: 58
- Overall height: 90
- Mounting hole spacing: 35

Pin Configuration (Top Header):

Pin	1	2	3	4	5	6	7	8	9	10	11	12
Symbol	⊙	●	⊗	⊗	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
Label	U _Z	-	B	COM	A	RES	+AO8	+AO7				

Pin Configuration (Bottom Header):

Pin	13	14	15	16	17	18	19	20	21	22	23	24
Symbol	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
Label	+AO1	+AO2	+AO3	+AO4	+AO5	+AO6						

Product Label:

 Konverter As 701
MODBUS/Analog

The schematic diagram illustrates the control system architecture. An RS485 interface module is connected to a microprocessor (μP). The microprocessor sends control signals to three relays, labeled I1, I2, and I8. These relays are connected to three output channels, labeled AO1, AO2, and AO8. A 24VDC power source is connected to the relays and the output channels. The output channels are also connected to ground.

1 3 ⊗ + U_z -	4 6 ⊗ B COM A	7 8 ⊗ RES	9 10 ⊗ + AO8 -	11 12 ⊗ + AO7 -	
Konwerter As 701 MODBUS/Analog					
+AO1 ⊗ 13 - ⊗ 14	+AO2 ⊗ 15 - ⊗ 16	+AO3 ⊗ 17 - ⊗ 18	+AO4 ⊗ 19 - ⊗ 20	+AO5 ⊗ 21 - ⊗ 22	+AO6 ⊗ 23 - ⊗ 24

TERMINAL		
1	+	Power supply 24V _{DC}
3	-	
	LED1	Power indication
4	B	RS485 MODBUS RTU
6	A	
	LED2	Transmission indication
7	RESET	Return to fabric settings
8		
9	+	Analog output 8
10	-	
11	+	Analog output 7
12	-	
13	+	Analog output 1
14	-	
15	+	Analog output 2
16	-	
17	+	Analog output 3
18	-	
19	+	Analog output 4
20	-	
21	+	Analog output 5
22	-	
23	+	Analog output 6
24	-	

Issued 07/2024