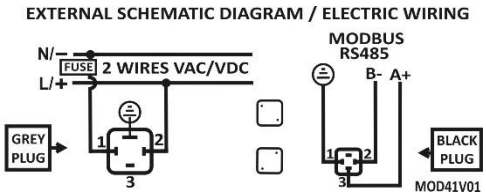
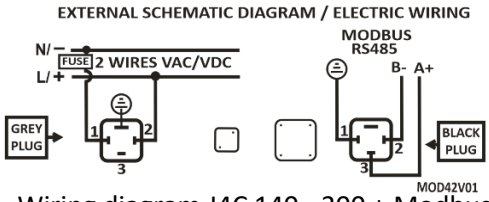
SET-UP & WORKING INSTRUCTIONS OF JJ ACTUATORS WITH MODBUS

Electric Actuator with Modbus - Connections:



Wiring diagram J4C 20 - 85 + Modbus



Wiring diagram J4C 140 - 300 + Modbus

Modbus configuration:

Select direction and signal in baud:

Program the **Direction**:

Set up the direction in the bus, by using the Holding Register 0x00.

The device has a factory setting value of (1). Nevertheless, this value could be changed by writing a new value on this register. Mind not to duplicate the mentioned value.

Select Speed in baud:

Set up of the Modbus communication, by using the Holding Register 0x01

Type Modbus: RTU
Bauds: 9600bps
Data Bits: 8
Parity: Even
Stop Bits: 1

Possible Configurations:

0: 9600, 8, E, 1 (factory settings)
1: 19200, 8, E, 1
2: 9600, 8, N, 2
3: 19200, 8, N, 2
4: 9600, 8, N, 1
5: 19200, 8, N, 1

Actions to be executed by Modbus:

Execute the action by using Preset Single Register 0x10:

Type of actions:

1: Remote Set.
2: Local Set.
3: On/Off Actuator go to Open direction.
4: On/Off Actuator go to Close direction.
5: On/Off Actuator stop the motor.
6: 3 position Actuator go to middle position.
7: Actuator + DPS, open/close regulation with values from 0 to 1000. (*5)

Subject to technical changes

J+J® Deutschland GmbH Brunnenweg 7 31061 Alfeld Tel.: +49 5181 85590-0 Fax.: +49 5181 85590-29 info@juj-deutschland.de www.juj-deutschland.de

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(*5) Actuator + DPS, open/close regulation with values from 0 to 1000.

To regulate an actuator with values between 0 and 1000, the actuator should be set-up from the factory as an actuator with positioner.

Steps to follow:

-Write the requested value (between 0 and 1000) on 0x11 Holding register. Please note that in a standard actuator setting, 0 = close and 1000= open.

-Write "7" value on the 0x10 register and the actuator will start moving.

*Different value table – examples of a 0º-90º Actuator.

Values	Degree	Position
0	0	CLOSE
50	4,5	4,5º
100	9	9º
150	13,5	13,5º
200	18	18º
250	22,5	22,5º
300	27	27º
350	31,5	31,5º
400	36	36º
450	40,5	40,5º
500	45	45º
550	49,5	49,5º
600	54	54º
650	58,5	58,5º
700	63	63º
750	67,5	67,5º
800	72	75º
850	76,5	76,5º
900	81	81º
950	85,5	85,5º
1000	90	OPEN

Read status with Modbus:

Read the Status by using Read Holding Registers.

Read status through 0x21: Status_lo

- Bit 0: "close" Micro switch activated, (physical confirmation).
- Bit 1: "open" Micro switch activated, (physical confirmation).
- Bit 2: "close" Digital Confirmation.
- Bit 3: "open" Digital Confirmation.
- Bit 4: "Middle position" Digital Confirmation.
- Bit 8: The DPS is controlling the actuator.
- Bit 9: The BSR is controlling the actuator.
- Bit 10: Local Set activated.
- Bit 11: Actuator set up as a "3 position actuator".

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Read Registers with Modbus:

Read Registers by using Read Input Registers.

Register List:

Actuator Status Registers:

Register 0x20: Status_hi
Register 0x21: Status_lo
Register 0x22: Periode_hi
Register 0x23: Periode_lo
Register 0x24: Frequence_hi
Register 0x25: Frequence_lo
Register 0x26: Temperature_hi
Register 0x27: Temperature_lo
Register 0x28: Voltage_hi
Register 0x29: Voltage_lo

Actuator Counter Registers :

Register 0x2A: Version_hi
Register 0x2B: Version_lo
Register 0x2C: Operations_hi
Register 0x2D: Operations_lo
Register 0x2E: Limitations_hi
Register 0x2F: Limitations_lo
Register 0x30: Time_Error_hi
Register 0x31: Time_Error_lo
Register 0x32: Power_On_hi
Register 0x33: Power_On_lo
Register 0x34: BSR_hi
Register 0x35: BSR_lo

Actuator Configuration Parameters:

Register 0x36: Limit_Close_hi
Register 0x37: Limit_Close_lo
Register 0x38: Limit_Open_hi
Register 0x39: Limit_Open_lo
Register 0x3A: Filter_RPM_hi
Register 0x3B: Filter_RPM_lo
Register 0x3C: Time_Unlock_hi
Register 0x3D: Time_Unlock_lo
Register 0x3E: Invert_Time_hi
Register 0x3F: Invert_Time_lo
Register 0x40: Operation_Time_hi
Register 0x41: Operation_Time_lo
Register 0x42: Input_Mode_hi
Register 0x43: Input_Mode_lo
Register 0x44: Max. PWM_hi
Register 0x45: Max. PWM_lo
Register 0x46: Temperature_hi
Register 0x47: Temperature_lo

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Register 0x48: Non_Stop_hi
Register 0x49: Non_Stop_lo
Register 0x4A: BSR_Operations_hi
Register 0x4B: BSR_Operations_lo
Register 0x4C: Input_Discrimination_hi
Register 0x4D: Input_Discrimination_lo
Register 0x4E: BSR_Protection_Time_hi
Register 0x4F: BSR_Protection_Time_lo
Register 0x50: Limit_Function_Retry_hi
Register 0x51: Limit_Function_Retry_lo
Register 0x58: DPS output Feedback (Value between 0 and 1000)

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