

# Dual Engine Throttle Controller

## Car telegraph controller

### MKF-JS72

Ver3.0 (ST32)

Independent PCBs for left and right steering wheels



MKF-JS72 Dual Engine Throttle Controller . Suitable for throttle control of marine engines, it can control two engines and features throttle and gear control functions. It has an electronic gear selector, adjustable PVC scale backlight, and uses a Hall sensor with full-temperature range linear compensation . It has an aluminum alloy housing with an anodized surface and uses nano-friction positioning materials for a good tactile feel.

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## I. Characteristics:

- Sensor: Hall sensor
- Operating angle:  $140^{\circ} (\pm 70^{\circ})$
- Gears: friction brake, with center mechanical gear
- Synchronous control: Dual servo stepper motors, with an internal electromagnetic clutch mechanism for excellent handling feel.

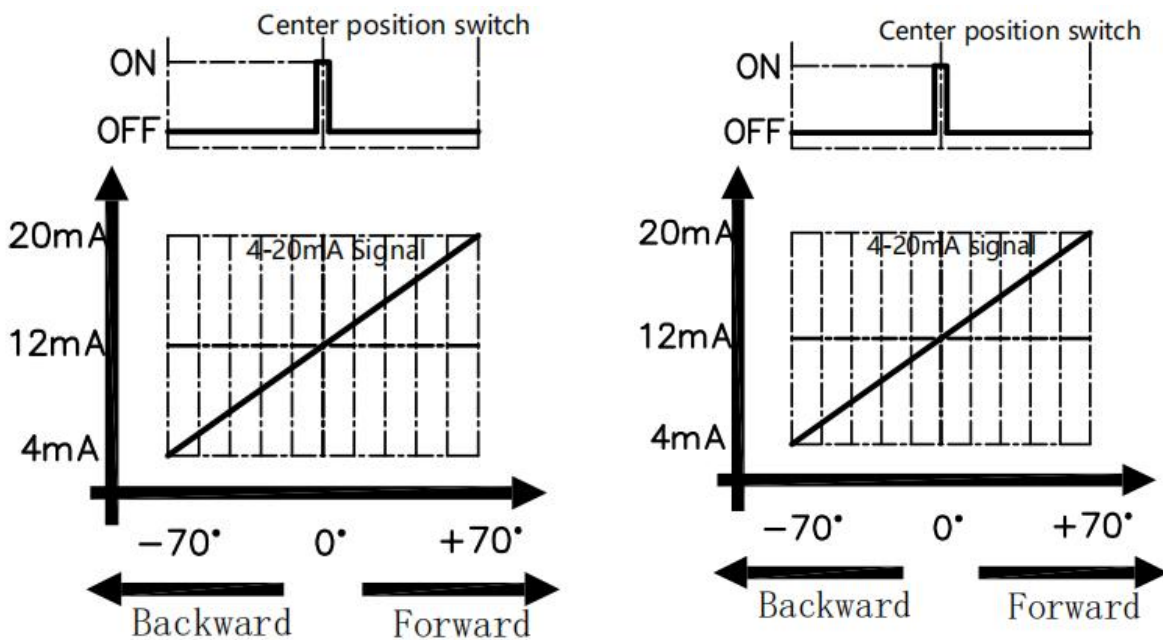
Synchronization control can be achieved through data communication or external input terminals, and remote synchronization control is also possible.

- Backlight: Adjustable backlight dimming via 0-24V signal input, dimming via communication data.
- Lifespan : Mechanical lifespan greater than 1 million cycles ;
- Signal output : 4-20mA current (12mA at midpoint), 2 channels on each side.  
Voltage signal: 0.5-2.5-4.5V or  $\pm 10V$ , one channel each.

CAN2.0 , 1 channel on each side

RS485 , 2 channels on each side

- Power supply: DC 24V ( DC10V /DC36V)  
Left and right engine power supply isolation, signal integrity isolation
- Operating temperature:  $-40^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$
- Defend Protection : IP 67 above the panel



Left rudder signal output    Right rudder signal output

CAN interface : Supports J1939 and CAN open

RS485 Interface : Two isolated RS485 interfaces

Backlight : The backlight on the panel uses electroluminescent surface emission technology, providing uniform light and adjustable brightness from 0-100%.

Follow-up function : The follow-up function is an automatic synchronization function. The

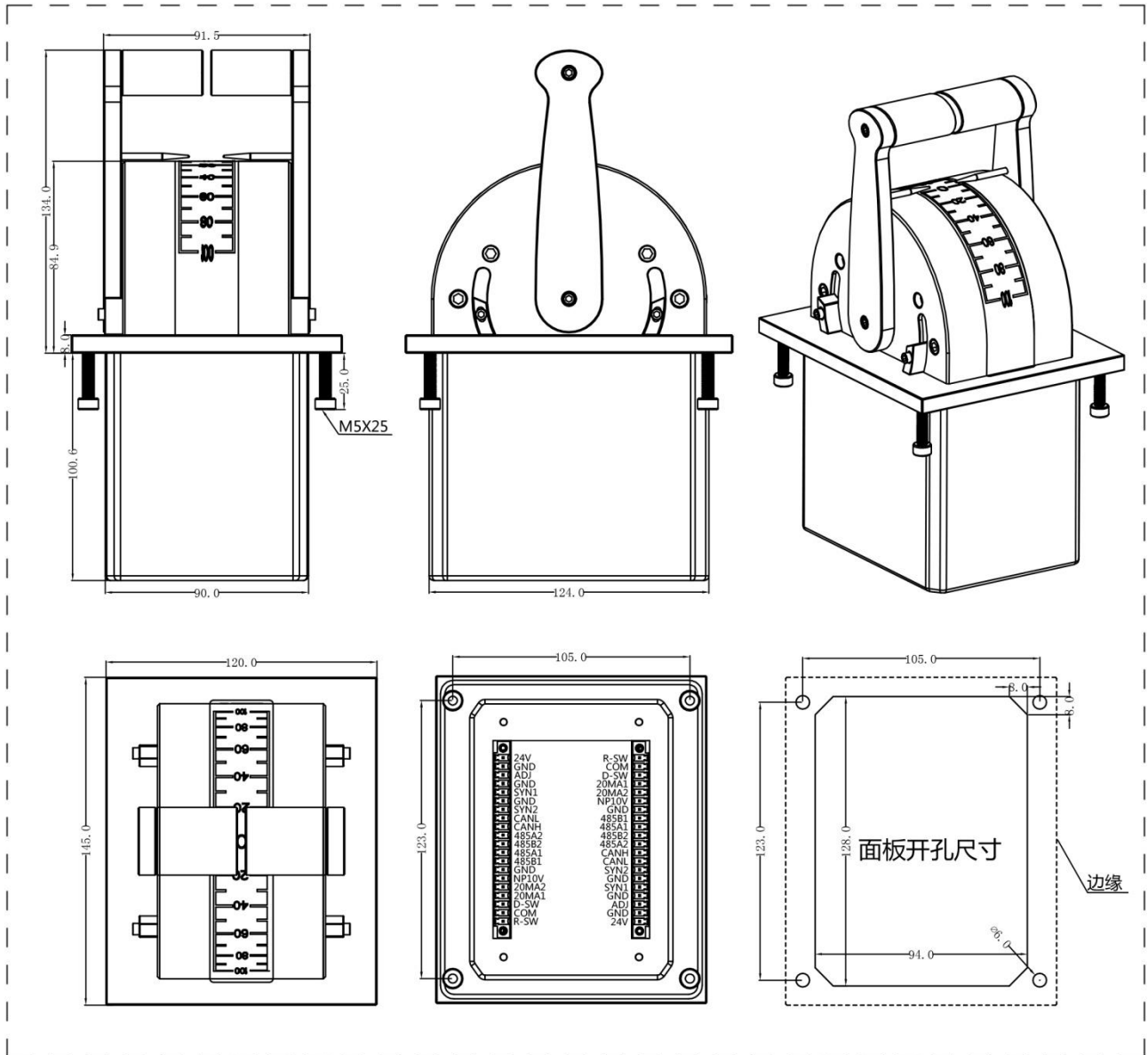
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controller has two follow-up switch interfaces. To activate the follow-up function,

The internal servo motor automatically rotates the left and right rudder handles to ensure that the left and right signal outputs are the same, and one of the rudder handles...

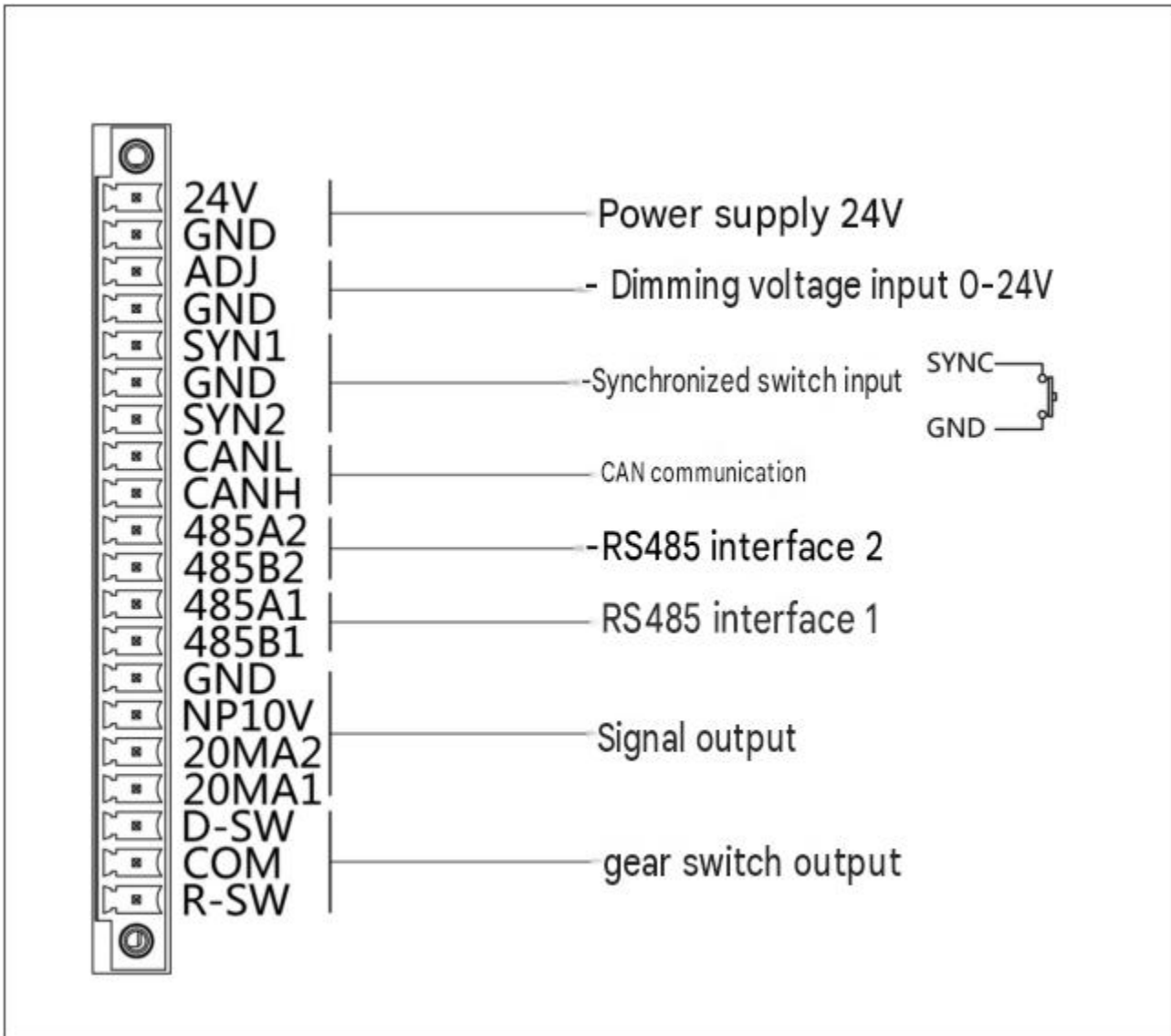
As one rudder handle moves, the other automatically follows.

## II. External Dimensions Drawing



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External wiring diagram:



The diagram above shows the wiring for one side; the wiring for both sides is the same. Connect a synchronous switch between SYNC1, SYNC2 and GND; connecting either one will work. The 4-20mA signal output is valid; the NP10V standby output ( $\pm 10V$ ) is not used. 4-20mA signal output, recommended load resistance:  $120\ \Omega$

## III. Modbus RTU Communication Protocol

### (1) Slave mode:

1. Baud rate: 9600
  2. Data bits: 1 start bit, 8 data bits, 1 stop bit, and a parity bit.
  3. Data format: Modbus
  4. Working mode: Slave station
- The controller receives the read command and replies with 1 frame of data.

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**Modbus master** data reading and slave response format (function code **03**) (PLC → joystick)

| Byte 1  | 2 bytes      | 3 bytes                | 4 bytes | 5 bytes             | 6 bytes            | 7 bytes | 8 bytes |
|---------|--------------|------------------------|---------|---------------------|--------------------|---------|---------|
| address | Read command | Register start address |         | Number of registers |                    | CRC     |         |
| 0x01    | 0x03         | high                   | Low     | High position<br>00 | Low position<br>02 | high    | Low     |

Example: Left rudder "register start address" = 4001 01 03 4 0 01 00 02 80 0B

Right rudder control register start address = 4003 01 03 4 0 03 00 02 21 CB

When the controller receives this command, it switches from master mode to slave mode. (It stops actively sending data; the joystick will only respond with the following data after receiving this read data.)

The slave station returns 9 bytes of data – the joystick's response (joystick → PLC).

| Function                | data | Parameter range                                          |
|-------------------------|------|----------------------------------------------------------|
| Device address          | 0x01 | Device address                                           |
| Function code           | 0x03 |                                                          |
| Data length             | 0x04 | 4 bytes                                                  |
| rudder shift            | 0x01 | 00 = Median<br>01 = Forward<br>02 = Back                 |
| rudder angle            | 0x64 | 0 - 100 / median = 0                                     |
| Follow-up switch status | 0x01 | Bit0 = Input 1, bit1 = Input 2<br>1 = valid, 0 = invalid |
| Backlight brightness    | 0x1e | 0-100                                                    |
| CRC high bits           |      |                                                          |
| CRC low bits            |      |                                                          |

The device ID can be modified via commands, see section 4.(4)

For example: (Reading 4 registers)

PLC → Controller : 01 03 4 0 01 00 01 D5 CA

Joystick → PLC : 01 03 0 4 01 64 01 1e 3B 88

## Modbus (RTU mode)

### (1) Controller Master Station Mode:

1. Baud rate: 9600
2. Data bits: 1 start bit, 8 data bits, 1 stop bit, and a parity bit.
3. Data format: Modbus
4. Working mode: Main site

### Main site data format (15 bytes)

| Function                           | data | Parameter range                    |
|------------------------------------|------|------------------------------------|
| Device address                     | 0x01 | Modbus station number              |
| Function code                      | 0x10 | 0x10                               |
| First register address - high byte | 0x00 | Register address                   |
| First register address - low byte  | 0x01 |                                    |
| Number of registers - high bits    | 0x00 | Number of registers                |
| Number of registers - low bit      | 0x03 |                                    |
| Data length                        | 0x06 | 6 bytes                            |
| Left tiller position               | 0x01 | 00=median<br>01=Forward<br>02=Back |
| left tiller angle                  | 0x64 | 0 - 100 / median = 0               |
| Right tiller position              | 0x01 | 00=median<br>01=Forward<br>02=Back |
| Right tiller angle                 | 0x64 | 0 - 100 / median = 0               |
| Follow-up switch status            | 0x08 |                                    |
| Backlight brightness               | 0x1e | 0-100                              |
| CRC high bit                       |      |                                    |
| CRC low bit                        |      |                                    |

The device ID can be modified via commands, see section 4(4).

For example: 011000 01 00 03 06 01 64 01 64 08 1e 00 B7

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## Modbus RTU

Write to register: (PLC → Controller )

### (1) Remote control of the steering wheel

Write (8 bytes)

| Function                     | data         | Parameter range                       |
|------------------------------|--------------|---------------------------------------|
| Device address               | 0x01         | Modbus station number                 |
| Function code                | 0x06         |                                       |
| Register address - high byte | 0x40         | Left handle=4005<br>Right handle=4007 |
| Register address - low byte  | 0x05         |                                       |
| Gear shifter                 | 81           | See the table below for explanation.  |
| Angle                        | twenty three | Throttle angle: 0-100 (0x00-0x64)     |
| CRC high bits                |              |                                       |
| CRC low bits                 |              |                                       |

The register address is fixed and cannot be modified, but the device ID can be modified via instructions. See section 4.(4)

For example, ID=1: 01 06 40 05 81 23 AD 82

ID=2: 02 06 40 05 81 23 AD B1

#### ① Gear

| Bit7                                   | Bit6 | Bit5 | Bit4 | Bit3 | Bit2 | Bit1      | Bit0     |
|----------------------------------------|------|------|------|------|------|-----------|----------|
| 1 = Motor Enable<br>0 = Motor disabled |      |      |      |      |      | Reversing | go ahead |

Note: 1 = valid, 0 = invalid

Bit1-0 00 = Park / 01 = Forward / 02 = Reverse

#### ② Throttle Angle: 0-100 (0x00-0x64);

When the current is 0, the output is 12mA; when moving forward 100, the output is 20mA; when moving backward 100, the output is 4mA.

③ When the controller receives this command, it automatically rotates the rudder to the corresponding angle.

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Write to register: (PLC → Controller )

## (2) Set the backlight brightness

Write (8 bytes)

| Function                        | data | Parameter range                              |
|---------------------------------|------|----------------------------------------------|
| Device address                  | 0x01 | Modbus station number                        |
| Function code                   | 0x06 |                                              |
| Register address - high byte    | 0x40 | Register address<br>0X4009                   |
| Register address - low byte     | 0x09 |                                              |
| Backlight switch                | 0x01 | 00 = Turn off backlight<br>01 = Backlight on |
| Backlight brightness percentage | 0x1e | Backlight brightness: 0-100 (0x00-0x64)      |
| CRC high bits                   |      |                                              |
| CRC low bits                    |      |                                              |

The register address is fixed at 0x4009 and cannot be modified. The device ID can be modified via instructions. See section 4.(4)

For example, ID=1: 01 06 40 09 01 1E CD 90

This command does not store parameters; after power is off, it will adjust the light intensity using the potentiometer.

When the controller receives this instruction, the backlight brightness will be based on the instruction. If the brightness knob is rotated, the brightness will be based on the knob's setting.

## IV. RS485 Protocol Format (Non-Modbus)

Data bits: 8 bytes

Baud rate: 9600

Start bit 1, Stop bit 1, Parity bit

Sending method: Send data only if parameters have changed; otherwise, do not send data if the data is the same as the previous one.

Simultaneous transmission of 2 RS485 channels

| Byte0        | Byte1                                    | Byte2                            | Byte3                                     | Byte4                             | Byte5                         | Byte6                            | Byte7                 |
|--------------|------------------------------------------|----------------------------------|-------------------------------------------|-----------------------------------|-------------------------------|----------------------------------|-----------------------|
| 0xFF<br>head | left<br>handle<br>gear<br>00 =<br>Median | left<br>handle<br>angle<br>0-100 | right<br>handle<br>gear<br>00 =<br>Median | right<br>handle<br>angle<br>0-100 | Follow-up<br>switch<br>status | Backlight<br>brightness<br>0-100 | CH<br>Validity<br>and |

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|  |                                 |  |                                 |  |  |  |  |
|--|---------------------------------|--|---------------------------------|--|--|--|--|
|  | 01 =<br>Forward<br>02 =<br>Back |  | 01 =<br>Forward<br>02 =<br>Back |  |  |  |  |
|--|---------------------------------|--|---------------------------------|--|--|--|--|

Note: CH = the low byte of the sum of Byte1 + Byte2 + Byte3 + Byte4 + Byte5 + Byte6 excluding the header.

## Gear Parameter Explanation

| Bit7 | Bit6 | Bit5 | Bit4 | Bit3 | Bit2 | Bit1                  | Bit0                          |
|------|------|------|------|------|------|-----------------------|-------------------------------|
| 0    | 0    | 0    | 0    | 0    | 0    | R gear<br>Accelerator | D gear<br>Forward<br>throttle |

Note: Valid = 1, Invalid = 0

N gear = 0x00    Parking  
D gear = 0x01 Forward throttle  
R gear = 0x02    to accelerate.

## Throttle angle value

Parameter range: 0x00-0x64 (hexadecimal) or 0-100 (decimal)

A value of 0            indicates 0% throttle.

A value of 100    indicates 100% throttle.

## Follow-up (synchronous) switch status

| Bit7 | Bit6 | Bit5 | Bit4 | Bit3 | Bit2 | Bit1    | Bit0    |
|------|------|------|------|------|------|---------|---------|
|      |      |      |      |      |      | Enter 2 | Enter 1 |

Note: 1 = Synchronization Start, 0 = Synchronization Disable. If either input 1 or 2 is 1, the synchronization function will be activated.

Backlight brightness: 0-100, which is adjusted from 0-100 by the system acquiring an external input voltage of 0-24V and using an external dimming potentiometer.

## V. CAN Protocol Section

MKF-JS72 controller sends (Controller → Device)

Data frame: 8 bytes

CAN ID: Supports extended frames and standard frames (see CAN ID settings below).

Baud rate: 250K

| Byte0                  | Byte1                                               | Byte2                    | Byte3                     | Byte4                            | Byte5 | Byte6                      | Byte7                  |
|------------------------|-----------------------------------------------------|--------------------------|---------------------------|----------------------------------|-------|----------------------------|------------------------|
| 0x01<br>Fixed<br>value | handle<br>gear<br>00 =<br>Median<br>01 =<br>Forward | handle<br>angle<br>0-100 | Follow<br>switch<br>state | Backlight<br>brightness<br>0-100 | 0x00  | Cyclic<br>counter<br>00-FF | 0xA5<br>Fixed<br>value |

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|  |              |  |  |  |  |  |  |
|--|--------------|--|--|--|--|--|--|
|  | 02 =<br>Back |  |  |  |  |  |  |
|--|--------------|--|--|--|--|--|--|

The loop counter increments by 1 for each frame of data sent, cycling through values from 0 to 255.

Right Handle =ID= 18fdd600 +01(address=01)

Left Handle = ID = 18fdd600 +02(address=02)

## Gear Parameter Explanation

| Bit7 | Bit6 | Bit5 | Bit4 | Bit3 | Bit2 | Bit1                  | Bit0                          |
|------|------|------|------|------|------|-----------------------|-------------------------------|
| 0    | 0    | 0    | 0    | 0    | 0    | R gear<br>Accelerator | D gear<br>Forward<br>throttle |

Note: Valid = 1, Invalid = 0

N gear = 0x00     Parking

D gear = 0x01 Forward throttle

R gear = 0x02     to accelerate.

## Throttle angle value

Parameter range: 0x00-0x64 (hexadecimal) or 0-100 (decimal)

A value of 0             indicates 0% throttle.

A value of 100     indicates 100% throttle.

## Follow-up (synchronous) switch status

| Bit7 | Bit6 | Bit5 | Bit4 | Bit3 | Bit2 | Bit1    | Bit0    |
|------|------|------|------|------|------|---------|---------|
|      |      |      |      |      |      | Enter 2 | Enter 1 |

Note: 1 = Synchronization Start, 0 = Synchronization Disable. If either input 1 or 2 is 1, the synchronization function will be activated.

Follow-up switch: The follow-up function is activated when either input 1 or input 2 is closed.

When starting automatically, it can only be controlled by the motor; manual operation of the handle is not allowed.

Backlight brightness: 0-100, based on the system's external input voltage of 0-24V.

If no external backlight control voltage is connected, the system defaults to 50% brightness.

## 1. Remote control of the steering wheel via CAN

Data frame: 8 bytes

CAN ID: Supports extended frames and standard frames (see CAN ID settings below).

(The received CAN ID can be changed)

Baud rate: 250K

Data command format: (HEX)

|       |       |      |       |    |    |    |       |
|-------|-------|------|-------|----|----|----|-------|
| 0x af | 0x22  | Gear | Angle | 00 | 00 | 00 | 0x f5 |
| head  | Order | gear | angle | 00 | 00 | 00 | tail  |

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Right Handle =ID= 18fdd 7 00 +01(address=01)

Left Handle = ID = 18fdd 7 00 +02(address=02)

Right handle address=0x01

Left handle address=0x02

Gear shifter

| Bit7                                   | Bit6 | Bit5 | Bit4 | Bit3 | Bit2 | Bit1      | Bit0     |
|----------------------------------------|------|------|------|------|------|-----------|----------|
| 1 = Motor Enable<br>0 = Motor disabled |      |      |      |      |      | Reversing | go ahead |

Note: 1 = valid, 0 = invalid

Bit1-0 00 = Park / 01 = Forward / 02 = Reverse

Throttle angle: 0-100 (0x00-0x64);

When the current is 0, the output is 12mA; when moving forward 100, the output is 20mA; when moving backward 100, the output is 4mA.

When the controller receives this command, it automatically rotates the rudder to the corresponding angle.

For example: af 22 81 28 00 00 00 f5 (HEX)

2. Remotely control the backlight via CAN (do not store, restore default values upon disconnection).

canid=18fdd700+address

Right handle address=0x01

Left handle address=0x02

Command format:

|               |               |                           |    |    |    |    |               |
|---------------|---------------|---------------------------|----|----|----|----|---------------|
| 0x af<br>head | 0x12<br>Order | Brightness value<br>0-100 | 00 | 00 | 00 | 00 | 0x f5<br>tail |
|---------------|---------------|---------------------------|----|----|----|----|---------------|

Once the controller receives this command, it will display the brightness value specified in the command.

This function is only effective when there is no external dimming voltage (command dimming).

For example: af 12 64 00 00 00 f5 (HEX) 100% brightness

## VI. System Control Commands:

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### Internal parameter settings

Users may need to set and modify the controller's communication parameters (CAN and

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RS485).

All of the above-mentioned "parameter modifications" can only be set through the joystick's RS485 interface, including CAN parameters.

RS485 data format settings:

The PC sends commands to the joystick via the controller (RS485 ) host computer (serial port assistant software).

If the host PC does not have an RS232 port (DB9 9-pin connector), you will need to purchase a USB to RS485 adapter; if the host PC has an RS232 port, you will need to purchase an RS232 to RS485 adapter. The factory default is 115200.8.1.N.

Instruction data format: 8 bytes

|        |         |        |        |        |        |        |      |
|--------|---------|--------|--------|--------|--------|--------|------|
| af     | CMD     | D1     | D2     | D3     | D4     | D5     | f5   |
| Header | Command | Data 1 | Data 2 | Data 3 | Data 4 | Data 5 | Tail |

CAN sets the data format:

Baud rate = 250K, data length 8, CanID = 00ED0512 extended frame, data format as above  
RS485 communication: 115200.8.1.N

Response data format: CAN ACK: 80 00 00 00 00 00 00 00

**For example:** Set the switching cycle to 25ms

RS485 ( 9600.8.1.N ):

|           |                          |
|-----------|--------------------------|
| Send:     | a f 11 19 00 00 00 00 f5 |
| Response: | 80 00 00 00 00 00 00 00  |

CAN (250K, ID= 00ED0512) :

|           |                          |
|-----------|--------------------------|
| Send:     | a f 11 19 00 00 00 00 f5 |
| Response: | 80 00 00 00 00 00 00 00  |

## I. Basic Instructions:

### 1. ACK Confirmation (Joystick - PC)

Response: 80 00 00 00 00 00 00 00

This indicates that the message was successfully received and executed.

### 2. Configure the left and right joysticks (PC -> Joystick) Factory settings

|                    |                          |
|--------------------|--------------------------|
| Right handle:      | af 0 a 00 00 00 00 00 f5 |
| Left handle:       | af 0 a 01 00 00 00 00 f5 |
| Single controller: | af 0 a 02 00 00 00 00 f5 |

First, set the left or right handle. After testing and confirming it works well, then set it to single or dual handle (dual test lights will illuminate).

Double handle: af 0 c 00 00 00 00 00 f5 (Default)

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Single controller: af 0 c 01 00 00 00 00 f5

## 3. Configure the motor option (PC -> joystick) Factory settings

No motor: af 0 b 00 00 00 00 00 f5

There is a motor: af 0 b 01 00 00 00 00 f5

## 4. Calibrate the median

① Place the handle in the middle position

② Begin calibrating the median: af 0 9 01 00 00 00 00 f5

Slightly move the handle to collect the mechanical gap.

Calibrate sensor angle

③ Calibrate the sensor midpoint: af 0 9 02 00 00 00 00 f5

Slightly move the handle to collect the mechanical gap.

④ Store calibration values: af 0 9 03 00 00 00 00 f5

Calibration complete

## 5. Analog signal median error adjustment settings (PC -> joystick) Factory settings

Median signal calibration:

4-20mA Output 1: Midpoint 12mA Fine-tuning +1: af 11 01 01 00 00 00 f5

4-20mA Output 1: Midpoint 12mA Fine-tuning -1: af 11 01 02 00 00 00 f5

4-20mA Output 2: Midpoint 12mA Fine-tuning +1: af 11 02 01 00 00 00 f5

4-20mA Output 2: Midpoint 12mA Fine-tuning -1: af 11 02 02 00 00 00 f5

Voltage signal reference: Median voltage fine-tuning +1: af 11 03 01 00 00 00 f5

Voltage signal reference: Median voltage fine-tuning -1: af 11 03 02 00 00 00 f5

Store the above parameters: af 16 00 00 00 00 00 f5

## 6. Calibrate the 4mA and 204mA current settings at both ends (PC -> joystick) Factory settings

Output signal boundary calibration

4-20mA signal 1

4-20mA Output 1: 4mA Fine-tuning +1: af 12 01 01 00 00 00 f5

4-20mA Output 1: 4mA Fine-tuning -1: af 12 01 02 00 00 00 f5

4-20mA Output 1: 20mA Fine-tuning +1: af 12 02 01 00 00 00 f5

4-20mA Output 1: 20mA Fine-tuning -1: af 12 02 02 00 00 00 f5

4-20mA signal 2

4-20mA Output 2: 4mA Fine-tuning +1: af 12 03 01 00 00 00 f5

4-20mA Output 2: 4mA Fine-tuning -1: af 12 03 02 00 00 00 f5

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4-20mA Output 2: 20mA Fine-tuning +1: af 12 04 01 00 00 00 f5  
4-20mA Output 2: 20mA Fine-tuning -1: af 12 04 02 00 00 00 f5  
Store the above parameters: af 16 00 00 00 00 00 f5

## 7. Set address(ID)

af 0 6 ID 00 00 00 00 f5

ID=1 af 0 6 01 00 00 00 00 f5 default

ID=2 af 0 6 02 00 00 00 00 f5

ID=3 af 0 6 03 00 00 00 00 f5

ID=4 af 0 6 04 00 00 00 00 f5

## 8. Set the address of the Modbus Reg register.

af 0f DH DL 00 00 00 f5

DH high position

DL low position

For example: Register address = 0x1234 af 0f 12 34 00 00 00 f5

Register address = 0x0001 af 0f 00 01 00 00 00 f5 (default)

Register address = 0x0002 af 0f 00 02 00 00 00 f5

## 9. Communication Interface Selection: (PC -> Controller)

af 08 00 00 00 00 00 f5 CAN and Modbus slave default

af 08 03 00 00 00 00 f5 RS485modbus Main Station

## 10. Sending cycle settings (PC -> joystick)

0x af 0x05 Cycle 00 00 Ref 0x f5

Header Command Data 1 Data 2 Data 3 Data 4 Tail

Cycle = 5-229 ms, unit is "milliseconds"; (factory default: 20ms)

Setting this parameter will take effect after a reset or restart.

Set 20MS a f 05 14 00 00 00 00 f5 (HEX)

Set 25MS a f 05 19 00 00 00 00 f5 (HEX)

Set 33MS a f 05 21 00 00 00 00 f5 (HEX)

Set 50MS a f 05 32 00 00 00 00 f5 (HEX)

## 11. Protocol selection: (PC -> Controller)

Select analog signal or CAN protocol function: Format af 07 pro 00 00 00 00 f5

PRO protocol number

af 07 00 00 00 00 00 f5 4-20mA (default)

af 07 01 00 00 00 00 f5  $\pm 10V$

af 07 02 00 00 00 00 f5 0.5V-4.5V (Remove R27 and R28, replace R29 with OR)

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12. Store parameters: (PC->Controller)

af 16 00 00 00 00 00 f5

13. Reset Controller: (PC->Controller)

af 17 00 00 00 00 00 f5

14. Erase all settings: (PC -> Controller)

af 27 00 00 00 00 00 f5

15. Test the control rudder.

CANID=00ED0512 250K For factory testing only

af 22 81 28 00 00 00 f5

af 22 82 28 00 00 00 f5

af 22 80 00 00 00 00 f5

16. Set the RS485 baud rate (PC -> joystick)

0x af 0x 0 4 Baud 00 00 00 00 0x f5

Set 9600 af 0 4 00 00 00 00 00 f5 (HEX)

Set 19200 af 0 4 01 00 00 00 00 f5 (HEX)

Set 38400 af 0 4 02 00 00 00 00 f5 (HEX)

Set 57600 af 0 4 03 00 00 00 00 f5 (HEX)

Set 115200 af 0 4 04 00 00 00 00 f5 (HEX)

After setting this parameter, the new baud rate will take effect immediately.

17. CAN Port Baud Rate: (PC -> Joystick)

af 03 00 00 00 00 00 f5 (HEX) CAN baud rate = 100K

af 03 01 00 00 00 00 f5 (HEX) CAN baud rate = 125K

af 03 02 00 00 00 00 f5 (HEX) CAN baud rate = 250K (default)

af 03 03 00 00 00 00 f5 (HEX) CAN baud rate = 500K

af 03 04 00 00 00 00 f5 (HEX) CAN baud rate = 1000K

After setting this parameter, the new baud rate will take effect immediately.

18. Joystick "Send Node ID" setting: (PC->Joystick)

29-bit extended frame:

af 01 18 fd d6 00 00 f5 CanId=18fdd600

CANID for transmitting data = CanId + address

Note that you need to set the address first.

11-bit standard frame:

af 01 80 00 00 01 80 f5 canid=0x0180

CANID for transmitting data = CanId + address

Note that you need to set the address first.

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## 19. Joystick "Receive Node ID" setting: (PC->Joystick)

29-bit extended frame:

af 02 18 fd d7 00 00 f5 canid=18fdd700

CANID for received data = CanId + address

Note that you need to set the address first.

11-bit standard frame:

af 02 80 00 00 02 80 f5 canid=0x0280

CANID for received data = CanId + address

Note that you need to set the address first.