

MKF-JS69 CAN multifunctional electronic control handle

Product manual

Ver:04

2024-08-29



Excavator hydraulic wrist, multifunctional control handle

Both hands are present

Universal Hand Support Optional

CAN communication

DC24V power supply

Technical parameters:

Finger wheel: quantity 3, operating angle $\pm 30^\circ$, spring return

Button: 5

Power supply: DC24V

Minimum operating voltage: DC10V

Maximum operating voltage: DC36V

Working current: 50mA@DC24V

Signal output: CAN

Baud rate: 250Kbit/S, modifiable

Handle lead wire: (insert into PCB)

Pin1. Button 1: Brown

Pin2. Button 2: Green

Pin3. Button 3: White

Pin4. Button 4: Blue

Pin5. Thumbwheel S: Yellow

Pin6. Dial Wheel 0V: Black

Pin7. Thumbwheel+5V: Red

External lead: (lead length 20CM)

CANL white

CANH Blue

GND black (power supply -)

+24V red (power supply+24V) (10-36V)

MKF-JS69 CAN communication protocol

Extended frame CANID=0CFDD601 right handle/0CFDD602 left handle

Baud rate=250K, transmission cycle: 20ms, byte length 8

Bit Byte	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0	
BYTE 0	0	0	0	0	0	Z3-Err	Z2-Err	Z1-Err	Error alarm
BYTE1	0	0	Thumb wheel 3 Right	Thumb wheel 3 Left	Thumb wheel 2 Down	Thumb wheel 2 Up	Thumb wheel 1 Down	Thumb wheel 1 Up	direction indication
BYTE 2	A7	A6	A5	A4	A3	A2	A1	A0	Thumb wheel 1 0-255(center=0)
BYTE 3	B7	B6	B5	B4	B3	B2	B1	B0	Thumb wheel2 0-255(Center=0)
BYTE 4	C7	C6	C5	C4	C3	C2	C1	C0	Thumb wheel 3 0-255(Center=0)
BYTE 5	Button8	Button7	Button6	Button5	Button4	Button3	Button2	Button1	Button Switch
BYTE 6		Button15	Button14	Button13	Button12	Button11	Button10	Button9	Button Switch
BYTE 7	0-255 cycle count, value +1 for each frame sent								Message counter

Note: Button Switch, press=1, release=0

Internal parameter settings

After the following parameter settings are completed (except calibration center),
It must be stored. You can set all options before issuing the storage command.

1. Calibrate the median

CANID=00ED0512, baud rate=250K

①.Send neutral calibration command: AF 09 01 00 00 00 00 F5

②.Detect the mechanical clearance in the X, Y, Z axes and the neutral area

Gently shake the handle, X, Y, Z axis to detect the gap area of the neutral machine.

③Send boundary calibration command: AF 09 02 00 00 00 00 F5

Shake the handle, front and back, left and right, and the thumb wheel up and down to reach the boundary of the machine at the maximum angle to detect the boundary parameters.

④Send calibration completion command: AF 09 03 00 00 00 00 F5

When the joystick receives this command, the median area and boundary values are stored and permanently saved.

2. Median dead zone setting

Extended frame ID=00ED0512

Data format: af 14 XX ZH ZL 00 00 F5 (HEX)

XX=01 Finger Wheel 1 (Z1)

XX=02 Finger wheel 2 (Z2)

XX=03 Finger wheel 3 (Z3)

ZH dead zone high byte

ZL dead zone low byte

Dead zone size: default 0x0040, range (0x0000-0x0700)

Z1 Dead Zone=0x0040 af 14 01 00 40 00 00 f5 (default)

Z2 Dead Zone=0x0040 af 14 02 00 40 00 00 f5

Z3 Dead Zone=0x0040 af 14 03 00 40 00 00 f5

3. Set the CAN ID for 'send'

Instruction ID=Extended Frame 00ED0512

Modify CanID=Extended Frame 0X0CFDD600 Instruction Format: af 01 0c fd d6 00 00 F5 (HEX)

Modify CanID=Extended Frame 0X0CFDD601 Instruction Format: af 01 0c fd d6 01 00 F5 (HEX) Default

Modify CanID=Extended Frame 0X0CFDD602 Instruction Format: af 01 0c fd d6 02 00 F5 (HEX)

Modify CanID=Extended Frame 0X0CFDD603 Instruction Format: af 01 0c fd d6 03 00 F5 (HEX)

Modify CanID=Extended Frame 0X0CFDD604 Instruction Format: af 01 0c fd d6 04 00 F5 (HEX)

Instruction ID=Extended Frame 00ED0512

Modify CanID=standard frame 0X181 instruction format: af 01 80 00 01 81 00 F5 (HEX)

Modify CanID=standard frame 0X182 instruction format: af 01 80 00 01 82 00 F5 (HEX) default

Modify CanID=standard frame 0X183 instruction format: af 01 80 00 01 83 00 F5 (HEX)

Modify CanID=standard frame 0X184 instruction format: af 01 80 00 01 84 00 F5 (HEX)

4、 Set the CAN ID for 'receive' (currently not used)

Extended frame ID=00ED0512

CAN ID=0X0CFDD700 af02 0c fd d7 00 00 F5 (HEX)

CAN ID=0X0CFDD701 af02 0c fd d7 01 00 F5 (HEX) default

CAN ID=0X0CFDD702 af02 0c fd d7 02 00 F5 (HEX)

CAN ID=0X0CFDD703 af02 0c fd d7 03 00 F5 (HEX)

CAN ID=0X0CFDD704 af02 0c fd d7 04 00 F5 (HEX)

5、 Set CAN baud rate:

Extended frame ID=00ED0512

Data format: 8 bytes,

AF 06 00 00 00 00 F5 (HEX) CAN baud rate=125K

AF 06 01 00 00 00 F5 (HEX) CAN baud rate=250K (default)

AF 06 02 00 00 00 F5 (HEX) CAN baud rate=500K

AF 06 03 00 00 00 F5 (HEX) CAN baud rate=1000K

AF 06 04 00 00 00 F5 (HEX) CAN baud rate=100K

6、 Set CAN transmission cycle:

Extended frame ID=00ED0512

Sending cycle: 20ms (0x14), AF 11 14 00 00 00 F5

Sending cycle: 30ms (0x1e), af 11 1e 00 00 00 F5

Sending cycle: 50ms (0x32), AF 11 32 00 00 00 F5

Sending cycle: 100ms (0x64), AF 11 64 00 00 00 F5

7、 Set Address (customized protocol will be used in time)

Extended frame ID=00ED0512

Address=1 af 0d 01 00 00 00 00 F5 (HEX)

Address=2 af 0d 02 00 00 00 00 F5 (HEX)

Address=3 af 0d 03 00 00 00 00 F5 (HEX)

Address=4 af 0d 04 00 00 00 00 F5 (HEX)

8、 Set Protocol

Extended frame ID=00ED0512

Protocol=0x00 af 0a 00 00 00 00 F5 (HEX)

Protocol=0x01 af 0a 01 00 00 00 F5 (HEX)

Protocol=0x02 af 0a 02 00 00 00 00 F5 (HEX)

Protocol=0x03 af 0a 03 00 00 00 00 F5 (HEX)

9、 Storage parameters

If the above settings are not stored, the data set will be lost,

Extended frame ID=00ED0512

af 16 00 00 00 00 00 F5 (HEX)

10、 Reset and restart

Extended frame ID=00ED0512

af 17 00 00 00 00 00 F5 (HEX)

Assembly direction

Assembly method for the dial wheel: Same method for both left and right hands

Finger wheel (3 pieces): Z1,Z2,Z3

Dial wheel signal: 0.5-2.5-4.5V

Z1 left small right large

Z2 left small right large

Z3 left small right large

Button: The handle can be equipped with 5-9 buttons (K8 is not available on the PCB board), press K1-K7, K9-K10 (skip K8)