

MKF-JS38

MATE Joystick, Single Engine Throttle Controller/Lever



DESCRIPTION

MKF-JS38 single engine throttle controller. Suitable for ship engine throttle control, can control 1 engine, with throttle control and gear control functions. There are 3 mechanical gears DNR, synchronous instructions. It adopts Hall sensor, full temperature range linear compensation, stainless steel shell, waterproof and salt spray design, friction resistance positioning.

FEATURES

- Sensor: Hall sensor
- Operation angle: 156 degrees
- Gear position: 3 gears (DNR)
- Life span: more than 5 million times;
- Signal output: analog voltage 0.5~4.5V, CAN, RS485, 0-20mA.
- Power supply: DC5V (DC12V/DC24V)
- Operating temperature: $-40^{\circ}\text{C} \sim +70^{\circ}\text{C}$
- Protection: IP67

DNR indicator

D: Forward gear

When the handle is just in this gear, the red light of D gear is on. When the handle is pushed forward again, this is throttle control, and the green light of D gear is on at this time.

R: Reverse gear

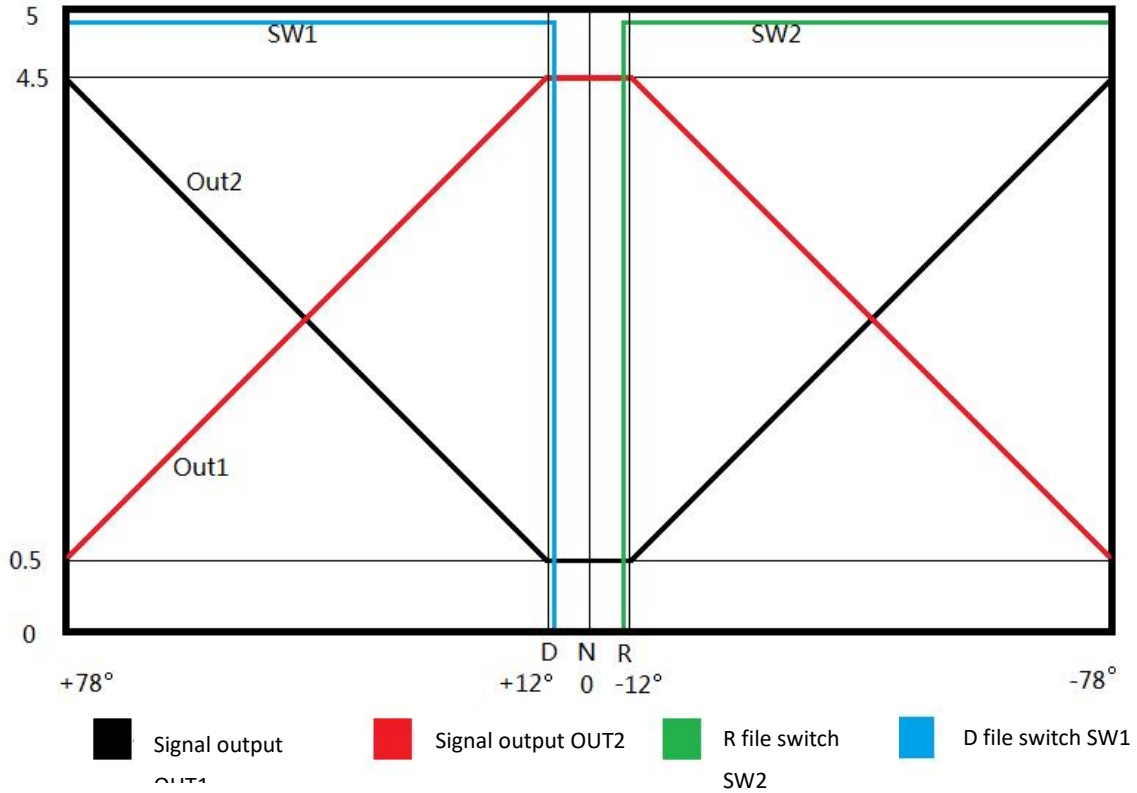
When the handle is just in this gear, the red light of the R gear is on. When the handle is pulled back again, this is throttle control. At this time, the green light of the R gear is on.

N: Neutral

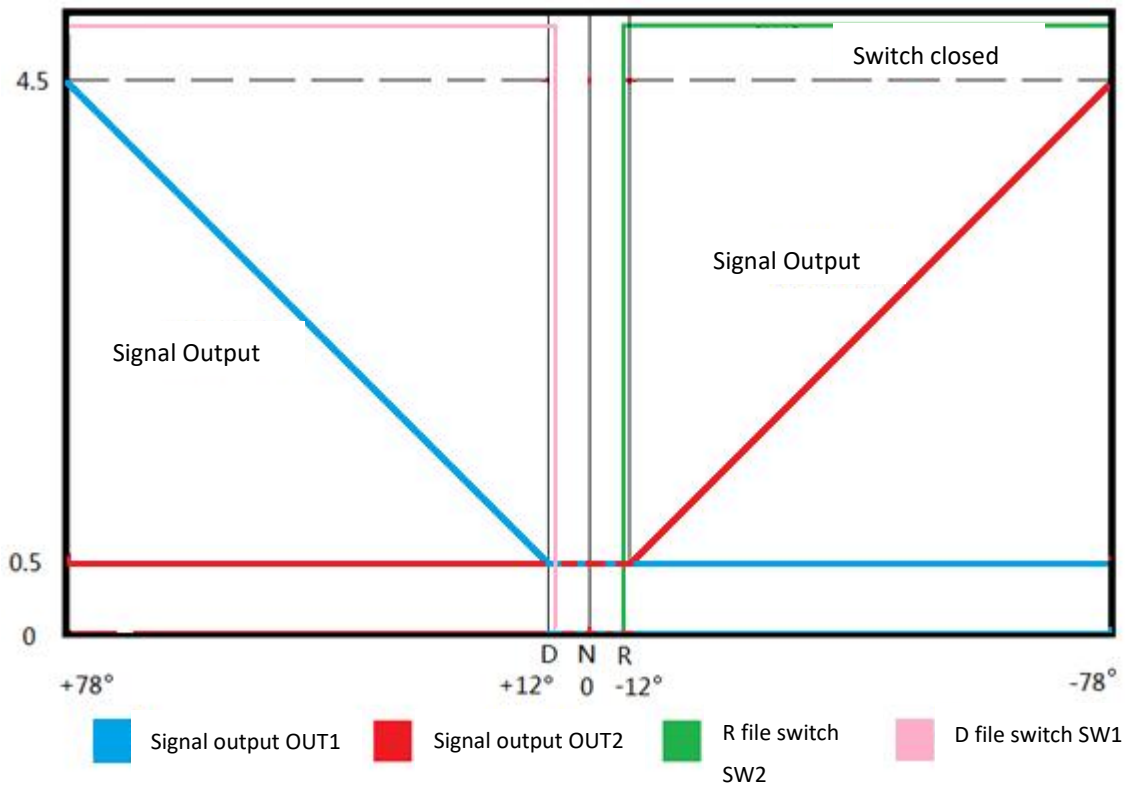
When the handle is just in this gear, the red light of N gear is on.

Analog voltage signal output:

Two-way cross signal output



Dual independent signal output



Analog voltage signal connector wiring diagram

Signal (7-pin aviation plug)

Pin	Symbol	Color	Function
1	GND	Black	GND (0V)
2	OUT1	Green	Signal output 1 (4.5-0.5-4.5)
3	OUT2	Yellow	Signal output 2 (0.5-4.5-0.5)
4	SW1	White	D file switch (High level in D gear)
5	SW2	Blue	R file switch (High level in R gear)
6	GND	Black	0V(GND)
7	V+	Red	V+ (Positive Power Supply)

- Power supply voltage: DC5V±0.5V
- Signal output: OUT1 and OUT2 signal voltage 0.5~4.5V, load resistance should be greater than 1KΩ.
- Switch signal SW1, SW2, level signal output, internal upper resistance 4.7K, pull-down current should be less than 20mA.
- Power consumption: DC5V power supply, current is less than 35mA.

Analog voltage 0-2.5V+ relay switch (customized)

The host speed is 600 rpm when 0v; 1500 rpm when DC2.5V

Independent power supply DC24V to the solenoid valve in the front gear of the gearbox

Independent power supply DC24V to the solenoid valve when the gearbox is in the back gear

Signal (7-pin aviation plug)

Pin	Symbol	Color	Function
1	GND	Black	GND (0V)
2	OUT1	Green	Signal Output 2 (0-2.5V)
3	SW-COM	Yellow	Switch common
4	D-SW	White	D file switch
5	R-SW	Blue	R file switch
6	GND	Black	0V (GND)
7	V+	Red	V+ (Positive Power Supply)

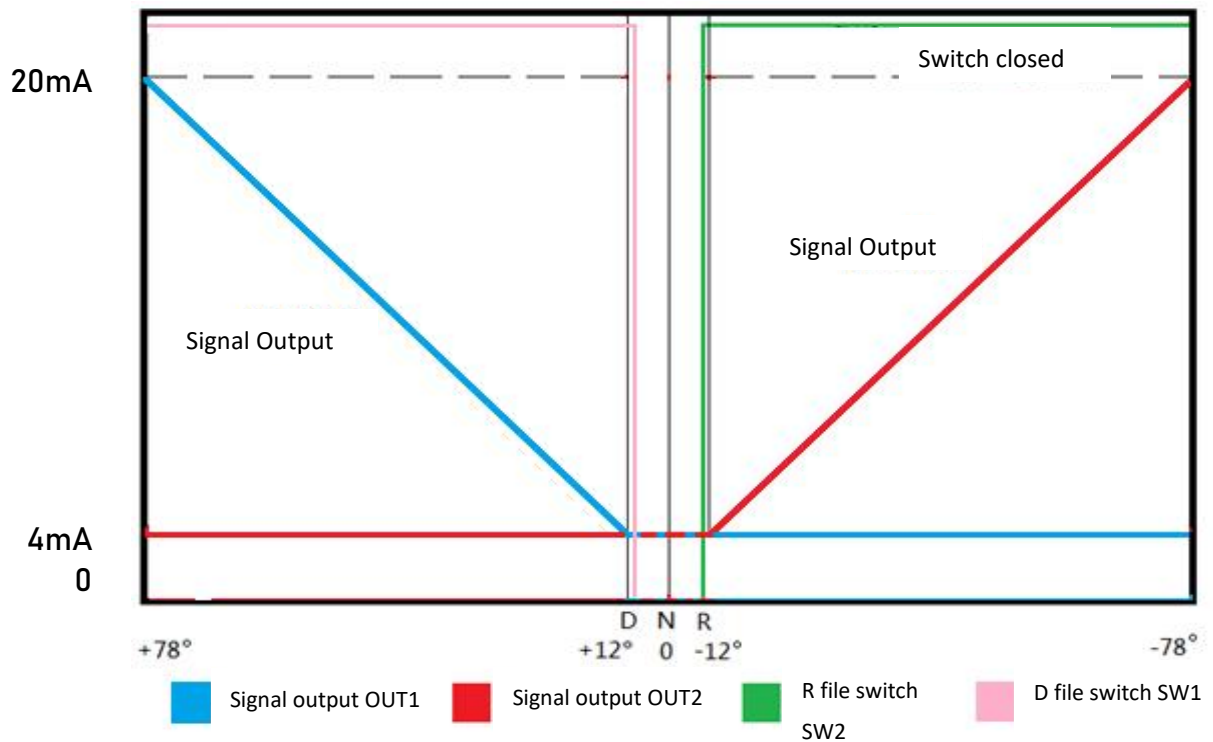
- Power supply voltage: DC5V±0.5V
- Signal output: 0-2.5V, median signal 0V, maximum angle 2.5V
- Switch signal: maximum current 2A
- Power supply: DC12 or 24V

Analog current signal 4-20mA connector wiring diagram

Signal (7-pin aviation plug)

Pin	Symbol	Color	Function
1	GND	Black	GND (0V)
2	OUT1	Green	Signal Output 1 (4-20mA)
3	OUT2	Yellow	Signal Output 2 (4-20mA)
4	SW1	White	Relay switch 1
5	SW2	Blue	Relay switch 2
6	GND	Black	0V(GND)
7	V+	Red	V+ (Positive Power Supply)

Relay switches SW1 and SW2 are normally open contacts, and the other end is connected to GND



CAN connector wiring diagram

Signal (Aviation plug 7-pin)

Pin	Symbol	Color	Function
1	GND	Black	Shield ground (0V)
2	CAN-H	Blue	CAN-H
3	CAN-L	White	CAN-L
4	RS485A	Yellow	RS485+
5	RS485B	Green	RS485-
6	GND	Black	0V(GND)
7	V+	Red	V+ (Positive Power Supply)

Pin 1 and Pin 6 GND have been connected internally

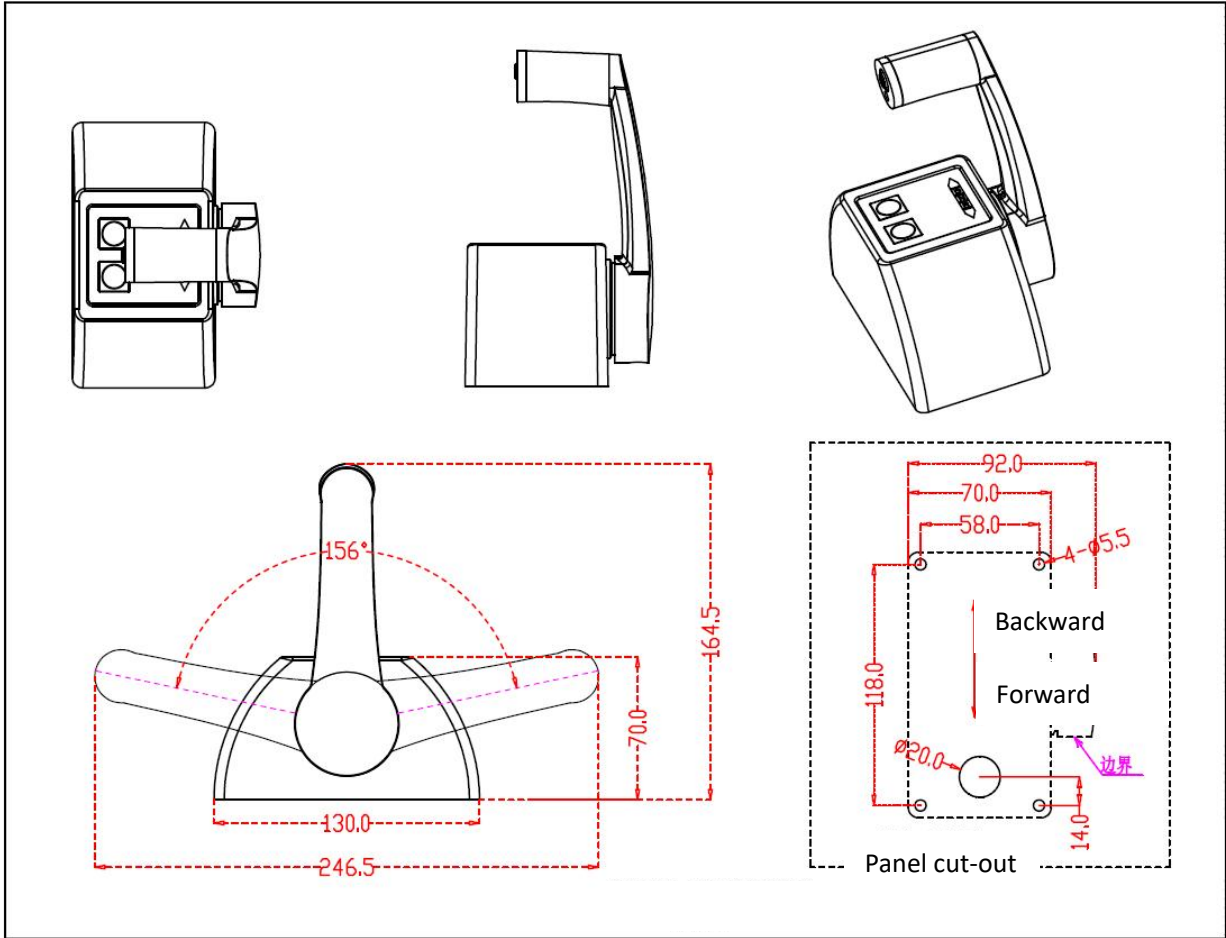
RS485 is used to set CAN parameters or connect to LCD display

RS232 signal connector wiring diagram

Signal (7-pin aviation plug)

Pin	Symbol	Color	Function
1	GND	Black	GND(RX232)
2	TXD	Green	TXD
3	RXD	Yellow	RXD
4		White	
5		Blue	
6	GND	Black	0V(GND)
7	V+	Red	V+ (Positive Power Supply)

DRAWING



CAN protocol format

Data frame: 8 bytes

CAN ID: Support extended frame and standard frame (see the CAN ID setting below for details), the default ID=0CFA0001

BYTE0	BYTE1	BYTE2	BYTE3	BYTE4	BYTE5	BYTE6	BYTE7
0x01	xxL	xxR	ssL	ssR	Button	0x00	0xA5
Fixed value	Handle gear	handle Gear (spare)	handle speed	handle Speed (spare)	Button	Fixed value	Fixed value

Note: The right handle is not used on MKF-JS38 series products (xxR and ssR are not used, and their values are meaningless)

xxL Specification

Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
				Reversing throttle	R file	D file	Forward throttle

Note: Valid=1 invalid=0

N file=0x00

D file=0x02

R file=0x04

Forward throttle = 0x01

Reversing throttle=0x08

Button Specification

Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
							Button

Note: Valid=1 invalid=0

Button press=0x01

Button release=0x00

ssL throttle speed value

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

A value of 0 means throttle is 0%

A value of 100 means 100% throttle