Metronix

Wireless MPG instructions
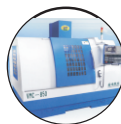

MWL J

MWL 2

MWL 1

MWL 3

Before using this product, please read this manual and keep it for future reference.

Typical applications: CNC machine tools, CNC engraving and milling machines, machining centers

This product is Manual Pulse Generator used on CNC machine tools. It has been widely used in CNC machine tools, CNC lathes, machining centers, CNC engraving and milling machines and other fields. This product uses wireless transmission technology, eliminating the need for spring wire connections, reducing equipment failures caused by cables, eliminating cable dragging, sticking to oil and other pollution, and making the operation more convenient. Product package includes a receiver and a wireless electronic handwheel. The receiver is connected to the device through a 16-core cable, and the Manual Pulse Generator communicates with the receiver through wireless transmission technology. The operator holds the handwheel and can get rid of the connection of spring wire and walk around freely. For large-scale gantry milling, CNC lathes, walking machine tools, cutting and other applications, it brings great convenience and improves work efficiency.

O Product Series

1. Basic wireless MPG: MLW 1; MWL2; MWL3

2. Emergency MPG: MWL J

O Support System

Suitable for SIEMENS, MITSUBISHI, FANUC, FAGOR, NUM, LNC , SYNTEC CNC, etc..

O Product features

- Wireless ISM frequency band, 433MHZ.
- Transmitting power 10DBM, receiving sensitivity -98DBM, obstacle-free distance 50 meters
- With emergency stop button function and 3 extended key inputs(only MWL J)

- Anti-interference design, stable and reliable, 32 sets of wireless handwheels are used in the same room, without mutual influence

- Low power consumption design, 2 AA batteries, normal use for 30 days

- With axis selection function, magnification selection function

- Using aluminum alloy encoder, stable and reliable performance, good hand feeling,

- Press the key to generate pulses (only MWL 3) to realize rapid movement of the machine tool

- The button adopts a waterproof switch to prevent oil and dust from entering。

○ working principle

Using wireless transmission technology, easy to operate, traditional spring wire connection is omitted, reduce the cable failure rate, avoid cable dragging, sticking to oil and other pollution.

50 meters wireless effective distance
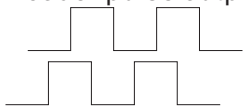
Wireless Receiver

○ Quick use manual

1. First connect the wireless receiver cable to the handwheel interface of machine tool system. After power on, the indicator light on the receiver lights up to indicate that the receiver works, otherwise, please check the connection of the receiver .

2. Install 2 AA batteries in handwheel, turn on the power switch, it can be used when signal light is on. (MWL J needs to press the enable buttons on both sides to turn on the signal light) .If signal light is not on, please check if the receiver is powered.

3. Turn the axis selection switch to the OFF position, you can turn off thepower of the handwheel leave the OFF position can turn on the power of the handwheel

MWL2

Encoder pulse output

Schematic diagram of axis selection switch relay

X	Brown
Y	Black and red
Z	Transparent+black
4	Blue
5	Orange
COM	Black and yellow

Schematic diagram of multiplying switch relay

1X	Green
10X	Black and White
100X	Black and Green
COM	Black and yellow

Work indicator

Power OFF
OFF
X
Y
Z
4
5

M
Metronix

Wireless pulse generator
MWL 2

1× 10×
100×

⏻ 📶 🔋

Product function description

MWL 2

Encoder

Axis selection switch, with X, Y, Z, 4, 5 axis, OFF gear

Override switch, with 1X, 10X, 100X speed regulation
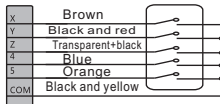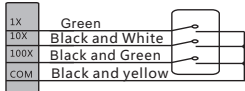
3 indicator lights
(See notes for details)

Note1: Power indicator light (left one): When axis selection switch is switched to OFF position, power turned off, and power indicator light will goes out; when axis selection switch is in the X, Y, Z, 4, and 5 positions, the power is turned on and indicator light is always on.
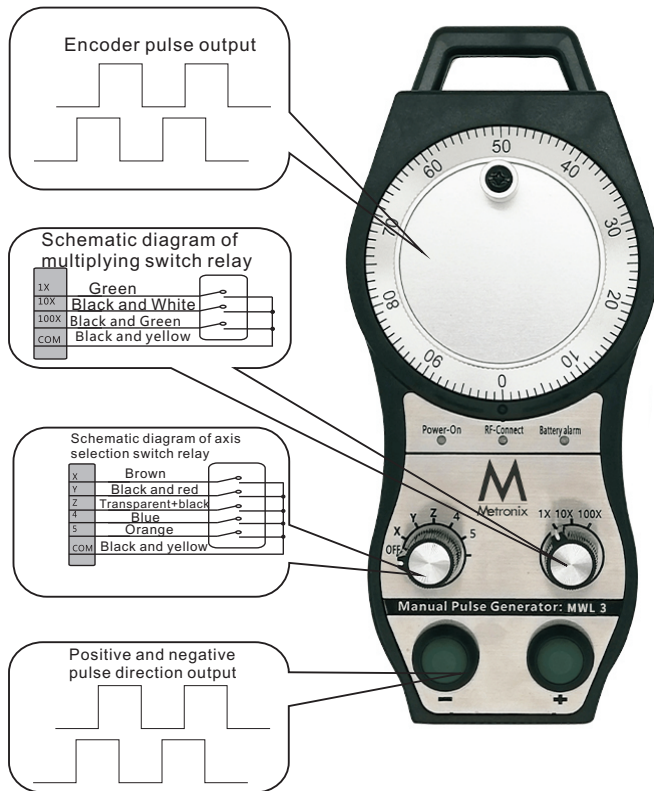
Note2: Signal indicator (second from left): The wireless signal indicator is always on when operating the handwheel;
When the handwheel is not operated, the wireless connection indicator is off;
If the wireless connection between the handwheel and the receiver is not right, the indicator light does not light up when shaking the handwheel,

Note3: When the battery power is lower than 2.2V, the low voltage alarm light will be on, Please replace the battery in time

MWL3

Encoder pulse output

Schematic diagram of multiplying switch relay

1X	Green
10X	Black and White
100X	Black and Green
COM	Black and yellow

Schematic diagram of axis selection switch relay

X	Brown
Y	Black and red
Z	Transparent+black
4	Blue
5	Orange
COM	Black and yellow

Positive and negative pulse direction output

Power-On   RF-Connect   Battery alarm

M
Metronix

X Y Z 4
OFF   5
X   1X 10X 100X

Manual Pulse Generator: MWL 3

50
60
70
80
90
40
30
20
10
0

Product function description

MWL 3

Encoder

Wireless connection indicator
(See note 2 for details)

Power Indicator
(See note 1 for details)

Axis selection switch,
with OFF, X, Y, Z, 4, 5 axis

Negative fast
move button

Low voltage alarm light
(see note 3 for details)

Multiple switch, with 1 x,
10 x, 100 x speed
regulation

Forward fast
Mobile button

Note 1: power indicator: when the axis selector switch is turned to off, the power is off, and the power indicator is off;
When the axis selector switch is set to x, y, Z, 4 and 5 gears, the power is connected and the power indicator is always on

Note 2: when operating the handwheel, the wireless connection indicator is always on;
When handwheel is not operated, the wireless connection indicator is off;
If the wireless connection between handwheel and receiver is not correct, the indicator will not be on when handwheel is shaken

Note 3: When the battery power is lower than 2.2V, low voltage warning light will be on, please replace the battery in time.
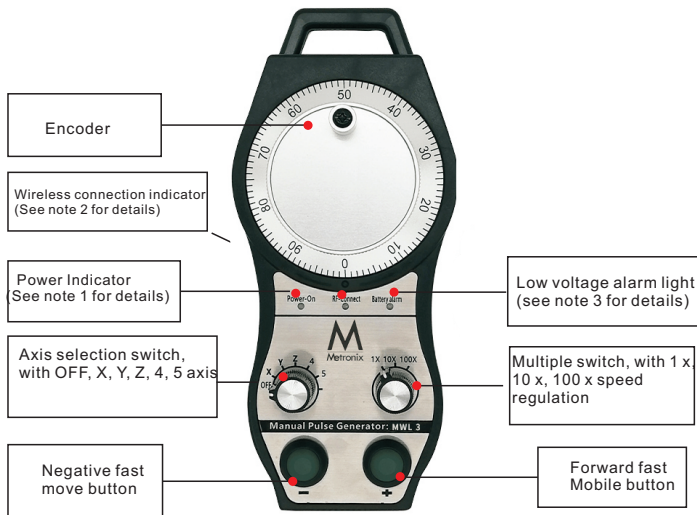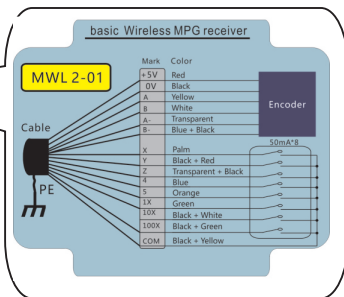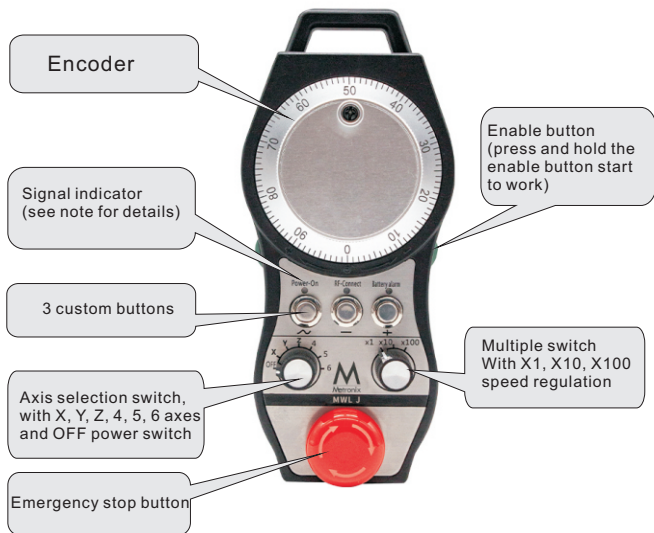
In order to ensure a long distance, the receiver needs to be installed on the top of the case or exposed, not in the case

basic Wireless MPG receiver

MWL 2-01

Mark	Color
+5V	Red
0V	Black
A	Yellow
B	White
A-	Transparent
B-	Blue + Black
X	Palm
Y	Black + Red
Z	Transparent + Black
4	Blue
5	Orange
1X	Green
10X	Black + White
100X	Black + Green
COM	Black + Yellow

Encoder

50mA*8

Cable

PE

Line number	colour	function
+5V	Red	Power positive
0V	Black	Power negative
A	Yellow	Pulse A phase
B	White	Pulse B phase
A-	Transparent white	Pulse A- phase
B-	Blue black	Pulse B- phase
X	Brown	Axis selection X axis
Y	Black red	Axis selection Y axis
Z	Transparent + Black	Axis selection Z axis
4	Blue	Axis selection 4 axis
5	Orange	Axis selection 5 axis
1X	Green	Magnification 1 X
10X	Black White	Magnification 10 X
100X	Black Green	Magnification 100 X
COM	Black Yellow	Common Signalling

Product function description

MWL J

Encoder

Enable button
(press and hold the
enable button start
to work)

Signal indicator
(see note for details)

3 custom buttons

Multiple switch
With X1, X10, X100
speed regulation

Axis selection switch,
with X, Y, Z, 4, 5, 6 axes
and OFF power switch
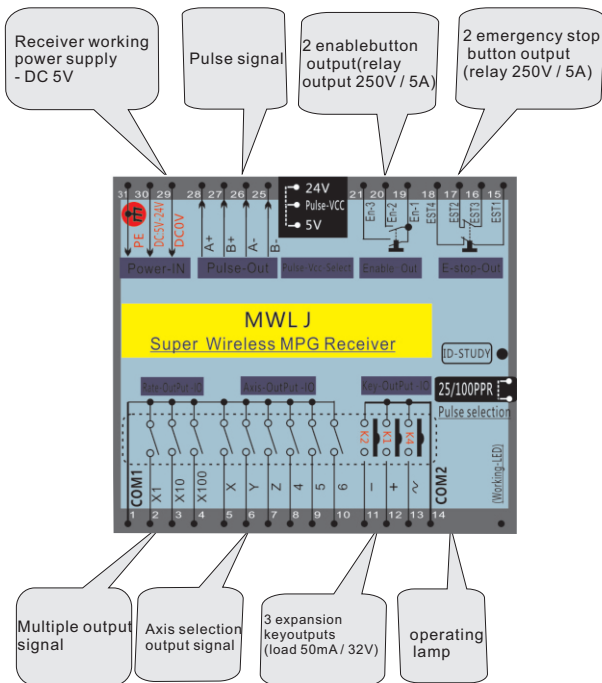
Emergency stop button

Note: power on: Power light will be on when the power switch is turned on(the OFF position of the axis selector switch is power switch)

RF connect: The signal indicator will not be on when power switchis pressed without operation; When power switch is pressed, and handwheel is operated, the signal indicator will be on, which is indicating that the signal is right; If not, Please check if the receiver is powered on.

Battery alarm: The low voltage indicator will be on when battery voltage lower than 2.2V please replace the battery in time

⚙ Function and principle of receiver

Receiver working power supply - DC 5V

Pulse signal

2 enablebutton output(relay output 250V / 5A)

2 emergency stop button button output (relay 250V / 5A)

MWL J
Super Wireless MPG Receiver

ID-STUDY

25/100PPR
Pulse selection

(Working-LED)

Multiple output signal

Axis selection output signal

3 expansion keyoutputs (load 50mA / 32V)

operating lamp

COM1: Common output terminal of axis selective magnification signal; It can be connected with 0-24 V signal

Com2: Three buttons output common terminal

Handwheel receiver signal terminal definition:

Definition of handwheel receiver port

number	Terminal symbol	Terminal definition	number	Terminal symbol	Terminal definition
1	COM1	Common end of axis selective magnification IO point	15	EST1	E-stop signal1 (with EST4 group)
2	X1	Multiple gear 1	16	EST3	E-stop signal 2 (with EST3- group)
3	X10	Multiple gear 10	17	EST2	E-stop signal 2 (with EST2 -group)
4	X100	Multiple gear 100	18	EST4	E-stop signal 1 (with EST1 -group)
5	X	Axis selection X	19	En-1	Enable signal common
6	Y	Axis selection Y	20	En-2	Enable signal 1 (with En-1-group)
7	Z	Axis selection Z	21	En-3	Enable signal 1 (with En-1-group)
8	4	Axis selection 4	25	B-	Pulse B - (non differential unconnected)
9	5	Axis selection 5	26	A-	Pulse A - (non differential unconnected)
10	6	Axis selection 6	27	B+	PulseB+
11	-	Key -	28	A+	PulseA+
12	+	Key +	29	DCOV	Negative pole of pulse power supply
13	⌒	Key ⌒	30	DC5V-24V	Negative pole of pulse power supply
14	COM2	Key IO point common terminal	31	PE	Ground wire (not required)