温州联宝贸易有限公司
Wenzhou Linp Trading co., ltd.
乐清市欧姆特尔电子科技有限公司
Yueqing Omter electronic technology co., ltd.

OM2000 系列工业手柄
OM2000 series industry handle

产品特点Product characteristic

- 摩擦定位或弹簧自动复位，中位可选择机械锁定。
  The friction localization or the spring automatic reset, the center position could selecting mechanism locking.
- 单轴前后方向操作或单方向操作。
  single axis front and back direction operation or single direction operation
- 可选择霍尔无接触角度检测或电位器角度检测方式。
  Could choose the Hall non-contact angle detect or the potentiometer angle detect method.
- 可选配方向微动开关（开关最大电流10A）
  Could select and match the direction micro switch (switch maximum current 10A)
- 可配置多种型号手柄上端。
  Could dispose many kinds of handle top body type.

应用范围Application scope

该系列产品主要应用于旋挖钻机、高空消防车、起重机、盾构机、煤矿提升机、石油提升机。
This series product mainly applies in turns on lathe digs the drilling machine, the upper air fire engine, the hoist crane, the shield machine, the coal mine elevator, the petroleum elevator.

技术参数Technical parameter

机械参数Mechanical parameter

摇动角度：±37.5º
Swing angle: ±37.5 º
使用寿命：大于500万次（电位器型），大于1000万次（霍尔型）
Service life: Is bigger than 5,000,000 times (potentiometer type), is bigger than 10,000,000 times (Hall type)
操作力：15N （最大）
Operate strength: 15N (biggest)
限位力：50N
Limit position strength: 50N
重量：500g（无上端）
Weight: 500g (without the top port)

电气参数Electrical parameter

电位器型Potentiometer type
总电阻值：10K Ω
Total resistance value: 10KΩ
精度：10%
Precision: 10%
中心角度：±3º
Central angle: ±3 º
最大功率：0.2W
Maximum power rate: 0.2W
微动开关：负载能力：15A@250Vac ， 10A@30Vdc （阻性负载）
Micro switch: Load capacity: 15A@250Vac, 10A@30Vdc (resistive load)
机械寿命：3000 万次以上
Mechanical life: more than 30,000,000 times
电气寿命：10 万次以上
Electrical life: more than 100,000 times
绝缘电阻：100M Ω以上（500Vdc 绝缘电阻计）
Insulation resistances: more than 100MΩ (500Vdc insulation resistance meter)

霍尔型 Hall Type

电源电压：5±0.5Vdc
Power supply voltage: 5±0.5Vdc
极限允许过电压：30Vdc （连续使用）
Limit permission overvoltage: 30Vdc (continuous use)
反向极限允许电压：15Vdc
The reverse limit permits the voltage: The 15Vdc
输出电压范围（可选）：
Output voltage scope (optional): H51= 霍尔型，DC5V 电源，0.5V～2.5V～4.5V电压输出
H51= Hall type, DC5V power source, 0.5V~2.5V~4.5V voltage output
H52= 霍尔型，DC5V 电源，0V～2.5V～5V电压输出
H52= Hall type, DC5V power source, 0V~2.5V~5V voltage output
H53= 霍尔型，DC5V 电源，1.25V～2.5V～3.75V 电压输出
H53= Hall type, DC5V power source, 1.25V~2.5V~3.75V voltage output

技术参数Technical parameter

最小负载阻抗：5KΩ
Minimum load impedance: 5KΩ
绝缘电阻：大于50MΩ（500Vdc时）
Insulation resistance: Is bigger than 50MΩ (when 500Vdc)

带转换电路With conversion circuit
输入电压 DC12V （9～18V）；DC24V （18～36V）
Input voltage: DC12V(9~18V); DC24V(18~36V)
最大电源电流：25mA
Biggest power source electric current: 25mA
最大输出电流（电压输出时）：20mA
Maximum output electric current (when voltage output): 20mA
标准电压输出
Standard voltage output
输出电压范围（可选）：
Output voltage scope (optional):

U11=DC12V 输入，-10V～0V～+10V 电压输出
U11=DC12V input, -10V~0V~+10V voltage output
U12=DC12V 输入，+10V ～0V～+10V 电压输出
U12=DC12V input,+10V~0V~+10V voltage output
U13=DC12V 输入，-5V～0V～+5V 电压输出
U13=DC12V input, -5V~0V~+5V voltage output
U14=DC12V 输入，+5V ～0V～+5V 电压输出
U14=DC12V input,+5V~0V~+5V voltage output
U15=DC12V 输入，0～+10V 电压输出
U15=DC12V input,0~+10V voltage output
U21=DC24V 输入，-10V～0V～+10V 电压输出
U21=DC24V input, -10V~0V~+10V voltage output
U22=DC24V 输入，+10V ～0V～+10V 电压输出
U22=DC24V input,+10V~0V~+10V voltage output
U23=DC24V 输入，-5V～0V～+5V 电压输出
U23=DC24V input, -5V~0V~+5V voltage output
U24=DC24V 输入，+5V ～0V～+5V 电压输出
U24=DC24V input,+5V~0V~+5V voltage output
U25=DC24V 输入，0～+10V电输出
U25=DC24V input,0~+10V electric output

标准电流输出
The standard electric current output
输出电流范围（可选）：

I21= 二线制4mA ～12mA ～20mA 电流输出
I21= two-wire system 4mA~12mA~20mA electric current output
I22= 二线制 20mA ～4mA ～20mA 电流输出
I22= two-wire system 20mA~4mA~20mA electric current output

环境参数Environment parameter

工作温度范围：-20℃～ +70 ℃
Operating temperature scope: - 20℃~+70℃
存储温度：-40℃～ +85 ℃
Storage temperature scope: - 40℃~+85℃
防护等级：IP65（安装面板以上）
Protection rank: IP65 (above the mounting panel)

产品选型Product Selection

OM2000 - □□□ - □□□ - □□□ - □□□ - □□□ - □□□

① ② ③ ④ ⑤ ⑥ ⑦

分项选型说明Sub-item selection instructions

① 产品系列号Product series number

OM2000系列工业手柄，单轴摩擦定位或弹簧复位，安装孔距尺寸为58mm

主要应用于旋挖钻机、高空消防车、起重机、盾构机、煤矿提升机、石油提升机

The OM2000 series industry handle, the single axis friction localization or the spring return, the installment pitch of holes size is 58mm

Mainly applies in rotary drilling rig, the aerial fire truck, crane, the shield, coal hoist, oil-hoist

② 操作方式The operating mode

FCF=摩擦定位，中位带手感

FCF= friction localization, the center position with feel

FEF=摩擦定位，起点（或终点）带手感

FEF= friction localization, the beginning (or end point) with feel

FCL=摩擦定位，中位机械锁

FCL= friction localization, the center position machinery locking

FEL=摩擦定位，起点（或终点）机械锁

The FEL= friction localization, the beginning (or end point) the machinery locking

SCO=弹簧复位，回中位

The SCO= spring return, returns to the center position

SCL=弹簧复位，回中位，中位机械锁

SCL= spring return, returns to the center position, the center position machinery locking

SEO=弹簧复位，回起点

The SEO= spring return, return to the beginning

SEL=弹簧复位，回起点，起点（或终点）机械锁

SEL= spring return, return to the beginning, the beginning (or end point) the mechanical locking

③ 输出信号Output signal

P101=带10K Ω中心抽头电位器0～100% 电压输出

P101= with 10KΩ center-tapped potentiometer 0~100% voltage output

H51=霍尔型DC5V 输入，0.5V～2.5V～4.5V电压输出

H51= Hall type DC5V input, 0.5V~2.5V~4.5V voltage output

H52=霍尔型DC5V 输入，0V～2.5V～5V电压输出

H52= Hall type DC5V input, 0V ~2.5V~5V voltage output

H53=霍尔型DC5V 输入，1.25V～2.5V～3.75V电压输出

H53= Hall type DC5V input,1.25V~2.5V~3.75V voltage output

U11=DC12V输入，-10V～0V～+10V 电压输出

U11=DC12V input, - 10V~0V ~+10V voltage output

U12=DC12V输入，+10V ～0V～+10V 电压输出

U12=DC12V input, +10V ~0V ~+10V voltage output

U13=DC12V输入，-5V～0V～+5V 电压输出

U13=DC12V input, - 5V~0V ~+5V voltage output

U14=DC12V输入，+5V ～0V～+5V 电压输出

U14=DC12V input, +5V ~0V ~+5V voltage output

U15=DC12V输入，0～+10V 电压输出

U15=DC12V input, 0~+10V voltage output

U21=DC24V输入，-10V～0V～+10V 电压输出
U21=DC24V input, - 10V~0V ~+10V voltage output
U22=DC24V输入，+10V ～0V～+10V 电压输出
U22=DC24V input, +10V ~0V ~+10V voltage outputt
U23=DC24V输入，-5V～0V～+5V 电压输出
U23=DC24V input, - 5V~0V ~+5V voltage output
U24=DC24V输入，+5V ～0V～+5V 电压输出
U24=DC24V input, +5V ~0V ~+5V voltage output
U25=DC24V输入，0~+ 10V 电输出
U25=DC24V input, 0~+10V electric output
I21=二线制4mA ～12mA ～20mA 电流输出
I21= two-wire system 4mA ~12mA ~20mA electric current output
I22=二线制20mA ～4mA ～20mA 电流输出
I22= two-wire system 20mA ~4mA ~20mA electric current to output
NA=无模拟信号输出
NA= non-simulated signal output

④ 微动开关 Micro switch
MS00=无微动开关
MS00= without micro switch
MS21=带10A 起点位置微动开关
MS21= with 10A beginning position micro switch
MS22=带10A 前后位置微动开关
MS22= with 10A front and back position micro switch

⑤ 手柄上端The handle top port

BG=顶部手掌操作
BG= The top palm of the hand operation
HD= Φ36mm*H90mm ，无按钮
HD=Φ36mm*H90mm, without button
HDS=Φ36mm*H90mm ，带一个按钮
HDS=Φ36mm*H90mm, with a button
KGNN=无安全开关，无跷板按钮
KGNN= no safety switch, no rocker button
KGDN=有安全开关，无跷板按钮
KGDN= has the safety switch, no rocker button
KGNR=无安全开关，有跷板按钮
KGNR= no safety switch, has rocker button
KGDR=有安全开关，有跷板按钮
KGDR= has the safety switch, has rocker button

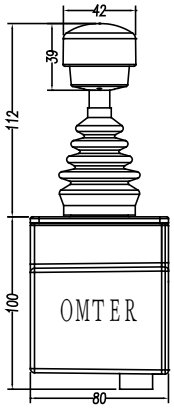
⑥ 出线方式Wire out-way wiring

L=电线输出
L= electric wire output
A=安普（AMP ）接插件
A= (AMP) connector

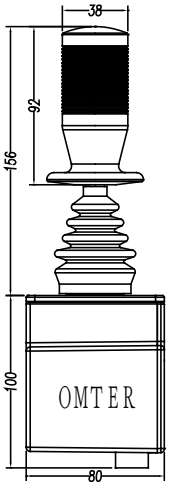
⑦ 外壳Outer covering

N=无外壳
N= without outer covering
H=有外壳
H= has outer covering

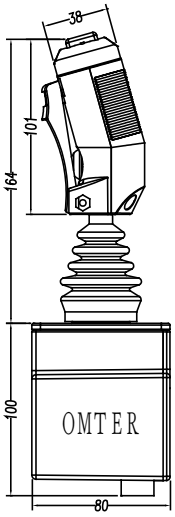
外形尺寸External dimensions



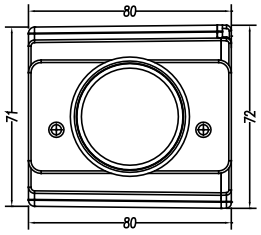
BG 上端BG top port



HD 上端HD top port

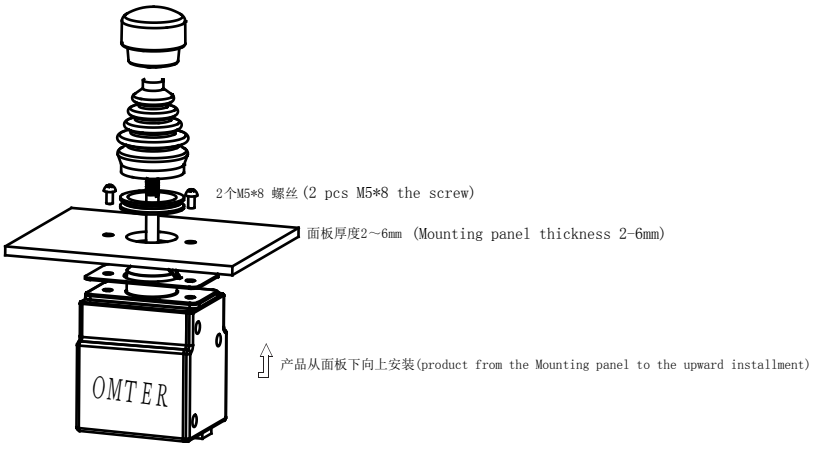


KGDR 上端KGDR top port

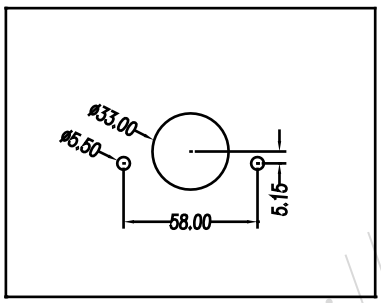


俯视图Vertical view

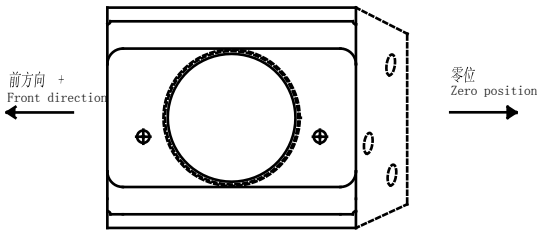
机械安装The machinery installment



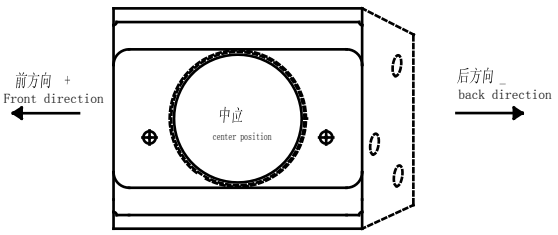
安装示意图Installs the schematic drawing



安装面板开孔示意图Mounting panel to the open hole schematic drawing



单方向操作方向定义Single direction operation direction definition



前后方向操作方向定义Front and back direction operation direction definition

电气安装Electrical installment

线缆出线方式接线图: Wire out-way wiring diagram:

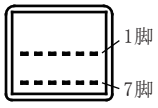
单方向操作：Single direction operation:

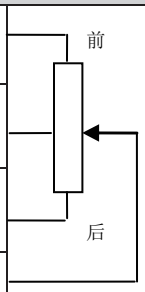
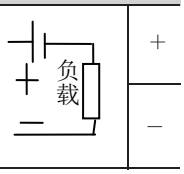
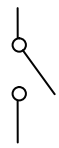
线序	功能
1	电位器前方向端
2	电位器后方向端
3	电位器滑动端
4	起点位置常开开关
5	起点位置常开开关

前后方向操作：Front and back direction operation:

线序	功能
1	电位器前方向端
2	电位器中位端
3	电位器后方向端
4	电位器滑动端
5	前方向开关
6	前方向开关
7	后方向开关
8	后方向开关

安普（AMP）接插件:



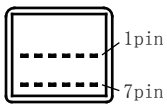
引脚		电位器	霍尔	24V 电压输入+-10V 输出	二线制电流输出
1		电位器前方向端	+5V	24V	
2		电位器中位 单方向 空	空	24V GND	
3		电位器后方向端	0V	输出＋	空
4		电位器滑动端	输出	输出－	空
5		前方向开关常开 单方向起点开关常开	前方向开关常开 单方向起点开关常开	前方向开关常开 单方向起点开关常开	前方向开关常开 单方向起点开关常开
6		前方向开关公共端 起点开关公共端	前方向开关公共端 起点开关公共端	前方向开关公共端 起点开关公共端	前方向开关公共端 起点开关公共端
7		后方向开关常开 单方向 空	后方向开关常开 单方向 空	后方向开关常开 单方向 空	后方向开关常开 单方向 空
8		后方向开关公共端 单方向 空	后方向开关公共端 单方向 空	后方向开关公共端 单方向 空	后方向开关公共端 单方向 空
9		跷板开关左方向常开	跷板开关左方向常开	跷板开关左方向常开	跷板开关左方向常开
10		手柄上端开关公共端	手柄上端开关公共端	手柄上端开关公共端	手柄上端开关公共端
11		跷板开关右方向常开	跷板开关右方向常开	跷板开关右方向常开	跷板开关右方向常开
12		安全开关	安全开关	安全开关	安全开关

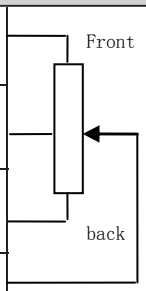
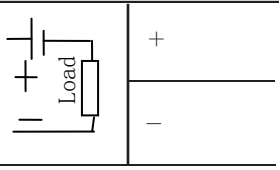
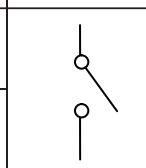
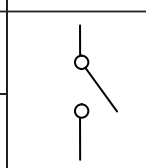
电气安装Electrical installment

Line No.	Function
1	Potentiometer front direction port
2	potentiometer back direction port
3	Potentiometer wiper port
4	Starting position normally open switch
5	Starting position normally open switch

Line No.	Function
1	Potentiometer front direction port
2	potentiometer intermediate position port
3	potentiometer back direction port
4	Potentiometer wiper port
5	Front direction switch
6	Front direction switch
7	Back direction switch
8	Back direction switch

AMP connector:



Pin		Potentiometer	Hall	The 24V voltage input +-10V output 24V	Two-wire system electric current output
1		Potentiometer front direction port	+5V	24V	
2		potentiometer intermediate Single direction Hollow	Hollow	24V GND	
3		potentiometer back direction port	0V	Output+	Hollow
4		Potentiometer wiper port	Output	Output-	Hollow
5		Front direction switch normally open Single direction Starting position switch normally open	Front direction switch normally open Single direction Starting position switch normally open	Front direction switch normally open Single direction Startingposition switch normally open	Front direction switch normally open Single direction Startingposition switch normally open
6		Front switch public port Starting point switch public port	Front switch public port Starting point switch public port	Front switch public port Starting point switch public port	Front switch public port Starting point switch public port
7		Back direction switch normally open Single direction Hollow	Back direction switch normally open Single direction Hollow	Back direction switch normally open Single direction Hollow	Back direction switch normally open Single direction Hollow
8		Back direction switch normally open Single direction Hollow	Back direction switch normally open Single direction Hollow	Back direction switch normally open Single direction Hollow	Back direction switch normally open Single direction Hollow
9		Rocker switch left direction normally open	Rocker switch left direction normally open	Rocker switch left direction normally open	Rocker switch left direction normally open
10		Handle top port switch public port	Handle top port switch public port	Handle top port switch public port	Handle top port switch public port
11		Rocker switch right direction normally open	Rocker switch right direction normally open	Rocker switch right direction normally open	Rocker switch right direction normally open
12		Safety switch	Safety switch	Safety switch	Safety switch

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