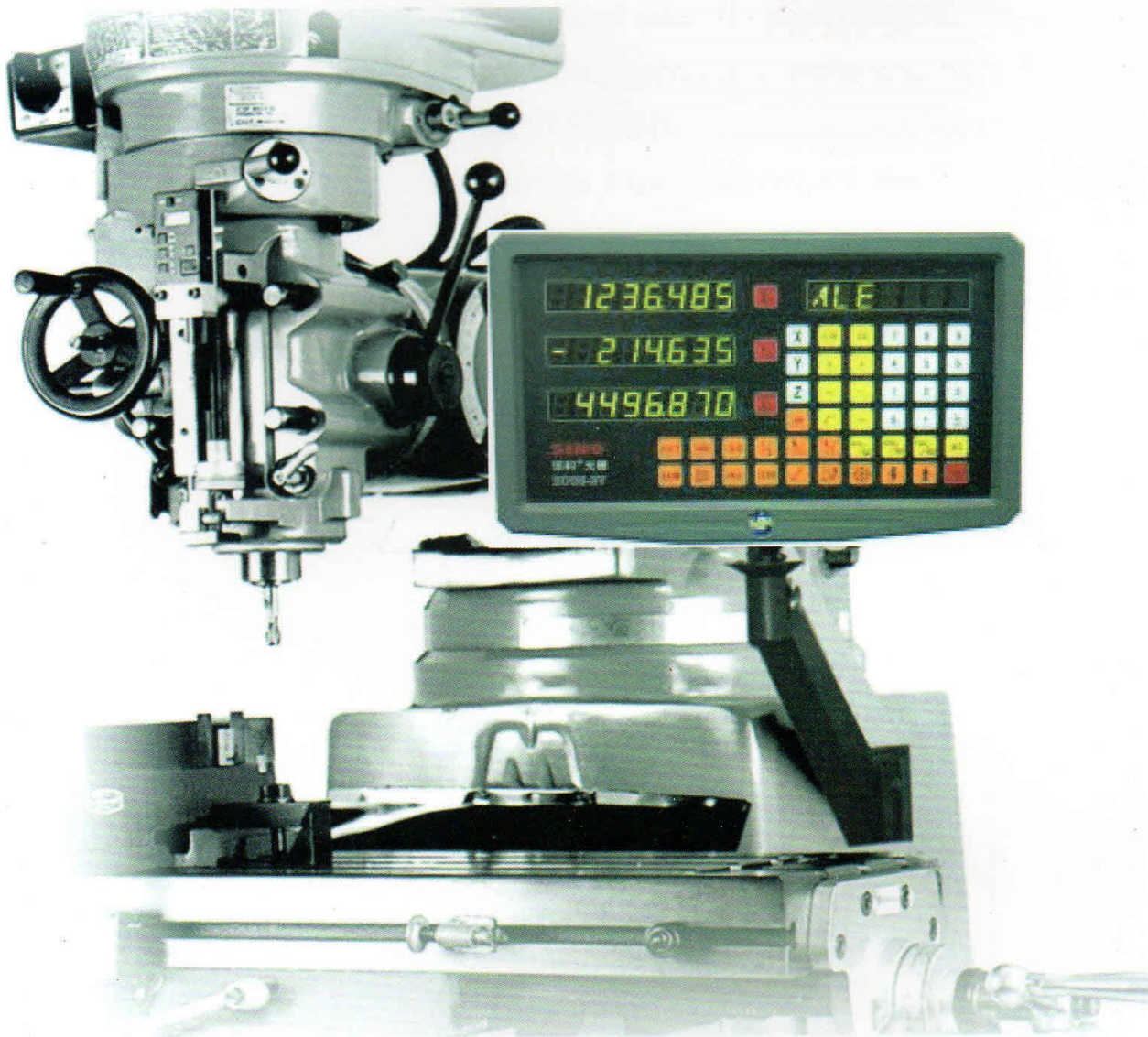


光栅数显系列产品

DIGITAL READOUT



广州市诺信数字测控设备有限公司

GUANGZHOU LOK SHUN CNC EQUIPMENT LTD.

广州市诺信数字测控设备有限公司（原-广州信和光栅数显有限公司SINO L,Digital Limited）是当今中国最大型的专业生产机床用光栅数显厂家，已获得CE欧洲安全标准认证及ISO9001国际质量体系认证，出口产品在同行中雄居榜首。

公司的拳头产品，“信和”“S”“SINO”品牌的光栅数显在世界是享誉盛名。自从1989年成立以来，通过不断地努力创新，已经连续十年全国销量第一。在同行中是国内生产品种（规格）最多、规模最大的企业，也是世界上第二大光栅数显的专业厂家。

Guangzhou Lokshun CNC Equipment Ltd was founded in August 2002,It is specializes in development and manufacture of high precision measuring products. It has a series of the word,s most advanced equipment and has been certificated by ISO9001,ISO14001,OHSAS18001 management system and the electrical safety standards for the European authentication.

The competitive products “S” “SINO” linear grating ruler and digital readout are very famous in the world. With untiring efforts in development in this area since 1989,we are the best seller in China for last ten years. It is not only the largest enterprise with the most types(specifications) in the same trade in China but also the second one of the world.

Enterprise Honor

企业荣誉



SDS3

The SDS3 DRO 系列数显表

SDS3数显表是体积最小的，同时SDS3系列数显表是专为单轴测量和点位控制的客户而设计的，具有很强的使用功能。



SDS3

SDS3-1 Digital readout functions

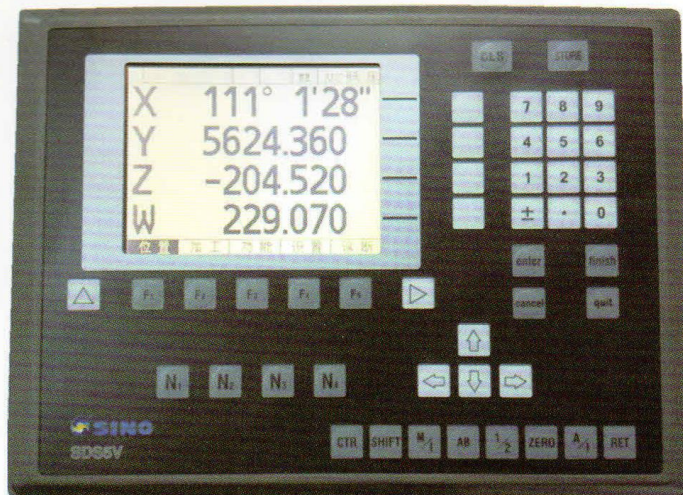
1. Mm/inch Measurement Transformation
2. Absolute/Relative Transformation
3. Linearity Error Compensation
4. Midsplit Function
5. Zero Adjustment
6. Absolute Reference Mark
7. Resolution Setting
8. Grinding Maching Debouncing Function
9. Radius/Diameter Conversion
10. RS-232-C Interface (additional)
11. Power Down Memory
12. Congruous Output (additional)
13. I/O sampling (additional)

SDS3-1数显表功能

1. 公制/英制转换
2. 绝对/相对转换
3. 线性误差
4. 分中功能
5. 归零
6. 绝对零参考点
7. 分辨率设置
8. 磨床去抖动功能
9. 半/直径转换
10. RS-232-C接口 (附加)
11. 掉电记忆
12. 符合输出 (附加)
13. I/O采样 (附加)

SDS5

The SDS5 DRO 系列数显表



SDS5V

SDS5V型数显表采用全新的32位嵌入式计算机技术，5.6" TFT彩色中英文显示，最大支持四轴，配备大容量电子硬盘，USB接口与PC进行调整数据传送。每轴多达600个非线性误差补偿点，可以通过双频激光测量仪和本公司专用软件生成对比数据文件，将文件保存在数显表内用做数据处理，使测量误差达到最小。数显表还具有图形路径模拟显示功能。在落地镗床、精密镗床、精密磨床、车床、EDM火花机等不同的专业功能。

The SDS5V DRO adopt the late-model 32bits embedded computing technology, 5.6" TFT colorful screen with Chinese and English captions, up to 4axis, equipped with high-capacity hard disc, USB equipment can be in communication with PC at a high speed. Each axis have up to 600 Non-linear error Compensation points, with dual frequency laser instrument and intelligent software developed by Lokshun, a data file is created and stored in the hard disc after contrastively measure for data processing, it was used to minimize error of the later measure. Path simulation function is also be provided in DRO. After being chosen the program it is eidedly used in milling machine、precision coordinate boring machine、ground boring machine、precision boring machine、precision grinding machine、lathe、EDM and other different special functions.

PDF 檔案使用 "pdfFactory Pro" 試用版本建立 www.pdffactory.com

其他功能如下：

非线性误差补偿

PCD圆周分孔

200点辅助零位功能

大容量电子硬盘存储测量文件

RS232传送

USB文件传送

四个坐标系显示、机床坐标、绝对坐标

相对坐标、200组用户坐标

公英制切换显示

软件诊断功能

AB功能寻找光栅尺参考点

掉电记忆功能

Other functions are listed as follows

Non-linear Error Compensation

PCD Hole Positioning on Circumference

200 Points Auxiliary Zero Position Function

High-capacity ROM disc for storage

Real time coordinate transmission with RS232

File transmission Function through USB

Four coordinate systems are adopted in this system,

namely,machine coordinate system,

absolute coordinate system relative coordinate

system and 200 user coordinate system

Metric/British units Switching Display

Software diagnosis Function

AB function to search for the reference point of encoder

Power Off Memory Function

SDS6

The SDS6 DRO 系列数显表



SDS6-3V

SDS6型数显表采用全新的32位基于ARM核心的微控制器，铝合金外壳。全面兼容SDS2系列的基本功能及各种机床的加工功能，最大支持四轴测量，达到一表全功能运行，该表采样速度更快，并可以通过与双频激光测量仪数值对比。每轴可输入40点非线性补偿数据进行修正处理，使测量误差达到最小。现广泛应用于精密坐标镗床、落地镗床、精密镗床、精密磨床、车床、EDM火花机、铣床等。

SDS6 digital display table uses a new 32 bit based on the core of the ARM microcontroller, aluminum alloy shell, can substitute all kinds of basic Function and special required function of SDS2 Series, an all-purpose DRO . The speed of measurement is faster, and the control system is easier and smoother. Each axis can supply 40 points of non-linear compensations. We can get the compensated value through the double-frequency laser measurement machines to reduce the measurement error accurately. It can be widely used in high accuracy coordinate boring machines, floor boring machines ,high accuracy boring machines , high accuracy grinding machines, lathe EDM machines , milling machines and so on.



SDS2MS



SDS2-3MS



SDS6-2V

1. 扩展计算器功能: 不仅在火花机、车床、普通铣床中原来没有计算器功能的表中增加了计算器功能, 计算器小数点浮动, 整数优先, 提高了计算精度。
2. 非线性误差补偿功能: 增加最多40点的非线性补偿功能, 提高了加工精度。
3. 英制显示小数位数选择功能: 增加英制中小数点后位数选择功能, 可选择4位或5位小数, 4位小数据可满足长尺需要, 5位小数满足高精度需要, 具体区别参考说明书。
4. 火花机功能: 集合通用2型数显表的两种火花机加工模式, 用户可灵活设置。
5. 车床轴叠加显示选择功能: 可选择Y、Z叠加显示, 或者Y、Z轴单独显示; (Y、Z轴对应以前2型表的Z、Z0轴), 在叠加显示功能中, 用户可通过使用相关键把Y轴叠加的数据分离开, 以便用户观察Y轴单独数据, 在分离形式中, X、Y、Z三轴可独立置数, 清零, 具有完整的三轴车床功能。
6. 整合功能: 由于数显表中集合了多款数显的功能, 在有需要的时候可灵活调用其它。
7. 扩展功能: 特殊功能和通讯功能, 涉及硬件模块的增加, 用户需求使用到相关功能时, 在购买前需要声明, 以便产品生产时进行硬件配置。
8. 亮度调整功能: 可以根据实际的需要调整数显表的亮度, 适应你的使用环境。

Strengthen functions

Large the calculator function:

Not only add the calculator function into the program of the DRO, but also have the function to select the number of digits behind the radix like 3, 4 or 5 digits to enhance the calculating precision.

Non-linear error compensation function:

The system has maximum 40 sections non-linear compensation to enhance machining precision.

In each display mode, the numbers of decimal digits can be chosen:

The numbers of decimal digits can be chosen as four or five digits can satisfy the 'long scales' requirement, more digits can be for the high precision requirements. Please review the manual for the detail about differences.

Multiple functions:

Compatible with two kinds of EDM processing function of the DRO SDS2 and it can be set flexible.

Multiple axes-accumulative sampling function:

You can choose to display the accumulative value of the X and Z or the singleness value of each one (Axes Y,Z correspond to Z, Z0 of old model SDS2). During this function, users can separate the data of axes Y by using the function buttons in order to observe the singleness data of Y. In the separation mode, we can set the value of X, Y and Z, it has complete functions for the lathe as three axes.

Combination functions:

The DRO combine with different kinds of processing function, the user can make selections on the requirement.

Expanded function:

The function and communication function's extension is provided with the alteration of hardware. Please make a confirmation before purchase so that the DRO can be used as special requirement.

Brightness adjustment function:

Capable to adjust the brightness of the digital readout according to the actual requirements, more adaptable to working conditions.

SDS 系列数显表功能一览表

功能(FUNCTION)	型号(TYPE)	SDS2	SDS3	SDS5
坐标数(NUMBER OF AXES)		2/3	1	4
分辨率(Hm) (RESOLUTION)		0.1/0.2/0.5/1/2/5/		
半径/直径转换(RADIUS/DIAMETER)		√(3ms)	√	√
公制/英制转换(MM/INCH)		√	√	√
绝对 / 相对(ABSOLUTE/INCREMENTAL)		√	√	√
分中功能(MIDSPUT FUNCTION)		√	√	√
简易“R”功能 (SIMPLE “R” FUNCTION)		√		√
平滑“R”功能(SMOOTH “R” FUNCTION)		√		√
PCD 圆周分孔(PCD CIRCLE EQUALLY DIVIDING HOLES)		√		√
200 组零位记忆(SAVE 200 WORKPIECE ZERO POINTS)		√		√
斜线打孔(DIVIDE HOLES ON AN OBLIQUE LINE)		√		√
函数计算器(MATHEMATICS CALCULATION)		√		√
矩形内腔渐进加工(STEP PROGRESSING OF RECTANGULAR INNER CHAMBER)		√(2ms)		√
刀具直径补偿(TOOL DIAMETER COMPENSATION)		√(3ms)		√
斜面加工(BEVEL PROCESS)		√		√
符合输出(OUTPUT ON SET VALUE)			√	√(5V)
零位自动追数(ZERO LOCATION AUTO REST)		√	√	√
锥度测量(TAPER MEASURE)		√(3ms)		√
数字过滤(DIGITAL FILTER)			√	√
200 把刀具库记忆(200 TOOL STOREROOM)		√		√
线性误差补偿(LINER ERROR COMPENSATION)		√	√	√
非线性误差补偿 (NON-LINER ERROR COMPENSATION)		√		√
RS-232-C 接口 (RS-232-C INTERFACE)			√	√(5V)
掉电记忆(POWER INTERRUPTION MEMORY)		√	√	√
一键清零(CLEANING KEY)		√	√	√
亮度调整功能 (Brightness adjustment function)		√		√

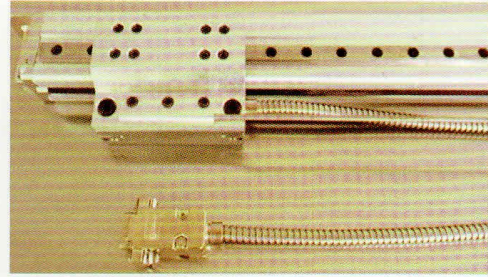
光栅式电子、精密光学尺一族

KA系列光栅尺，经过严格的质量检验，并采用最先进的动态激光测量仪对每一把尺进行准确的检测，并附有检验证书。

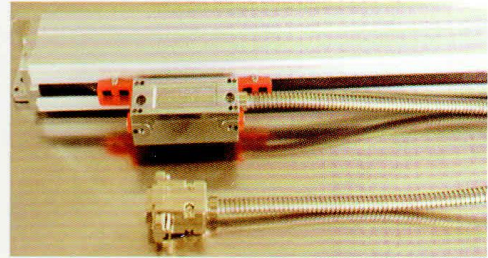
ALL KA series of linear encoder have passed the strict quality examination by the advanced dynamic laser interferometer to ensure the high precision. Test reports are provided.

其中KA-300、KA-600是用量最多的光栅尺（TTL电平），KA-200、KA-500为超小型薄尺，（分别16×16mm、20×18mm），为一些位置限窄的地方及专用测量仪器的安装提供方便；KA-700A是一种专用液压设备及位置极难安装而设计的产品；KA-800M是转为3米以上量程而设计的产品，长度可达50M，它的出现，将拓宽数显装置的使用领域。

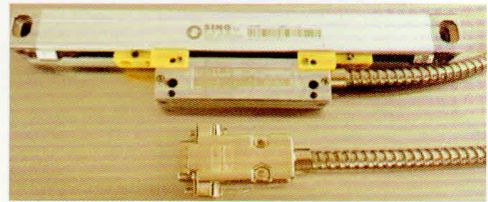
KA-300 and KA-600 are the most commonly used standard ruler (TTL level), KA-200, KA-500 is a super-miniature thin ruler (respectively 16×16mm 20×18mm), it facilitates the use in some narrow places and the installation of special purpose measuring instrument. As to KA-700A, it is a newest product designed especially for uses in oil pressure systems and in some spaces where installation is very difficult. KA-800M is a new product that can be connectable for length purpose that longer than 3000mm, the max length can be 50mm, the appearance of KA-800M will further broaden the application field of digital display devices.



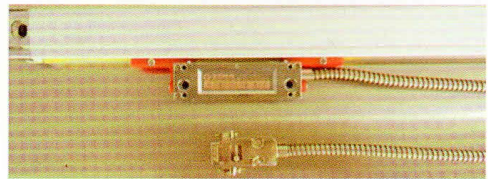
KA800M



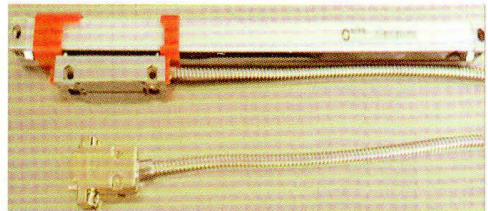
KA600



KA500



KA300



KA200

KA 系列光栅式电子尺参数一览表

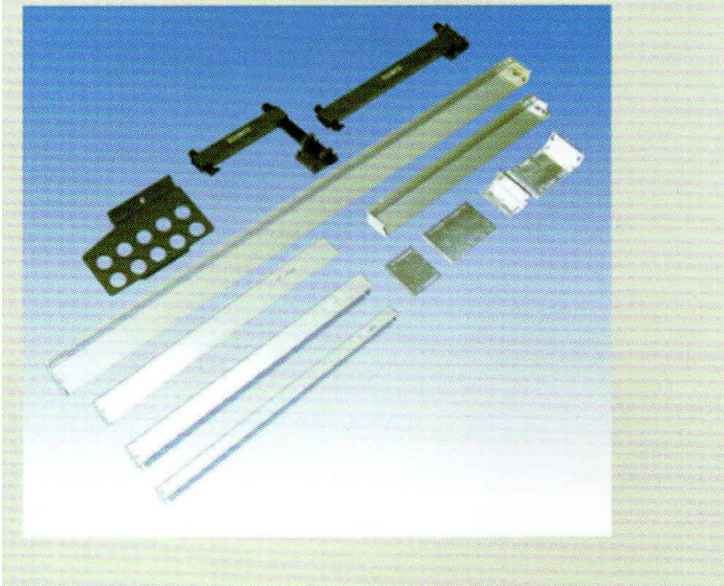
型号 (TYPE)	KA-200	KA-300	KA-500	KA-600	KA-700A	KA-800M
有效量程 (mm) (Measure Length)	30 ~ 360	70 ~ 1020	70 ~ 470	1000 ~ 3000	170 ~ 1240	3000 ~ 5000
截面积 (mm) (Cross Section)	16×16	25×34	18×20	30×43	30×43	32×57
准确度 μm (Accuracy)	± 3 、 ± 5 、 $\pm 10/1000\text{mm}$ (温度: $20^\circ\text{C} \pm 2^\circ\text{C}$, 湿度: 48 ~ 52%, 大气压: 86 ~ 106Kpa)					
零点参考点 (Reference Point)	每 50mm 一个					
最大移动速度 (Max of measuring speed)	60m/min					
密封保护 (protection)	IP53					
分辨率 μm (Resolution)	0.5/1/5	0.5/1/5	0.5/1/5	0.5/1/5	1/5	1/5
输出信号 (Output)	TTL	TTL/RS-422	TTL/RS-422	TTL/RS-422	TTL/RS-422	TTL

安装数显附件 多变组合一族

(Mill and Lathe Hardware includes)

本公司还提供了一系列完整的能满足各种机床安装的五金附件，给安装带来极大方便。

Besides, our company offers also a series of complete hardware accessory sets which can meet the requirements in the installation of various machine tools, and so can bring great convenience in the installation.



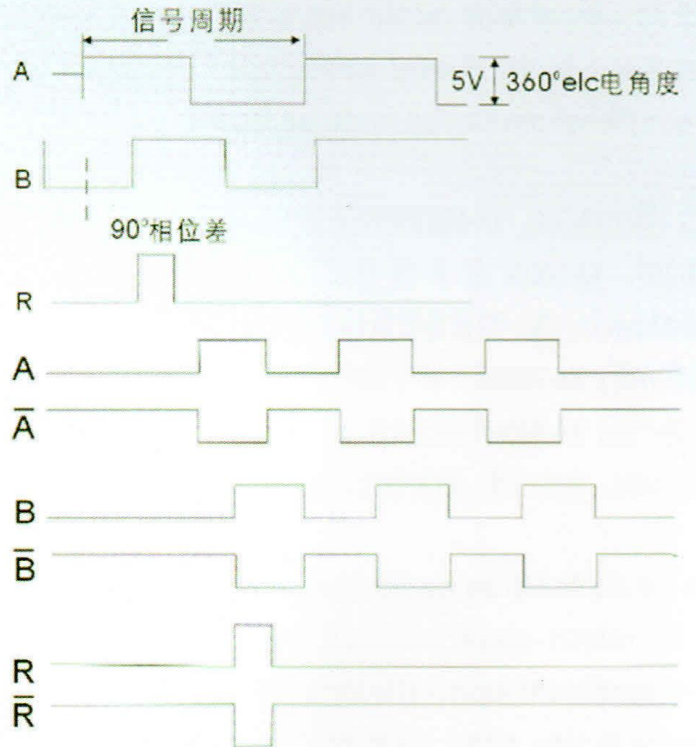
脚位	1	2	3	4	5	6	7	8	9
信号	空	OV	空	地线	空	A	+5V	B	R

七芯TTL信号输出图

脚位	1	2	3	4	5	6	7
信号	OV	空	A	B	+5V	R	地线

九芯EIA-422-A信号输出图

脚位	1	2	3	4	5	6	7	8	9
信号	A	OV	B	地线	R	A	+5V	B	R

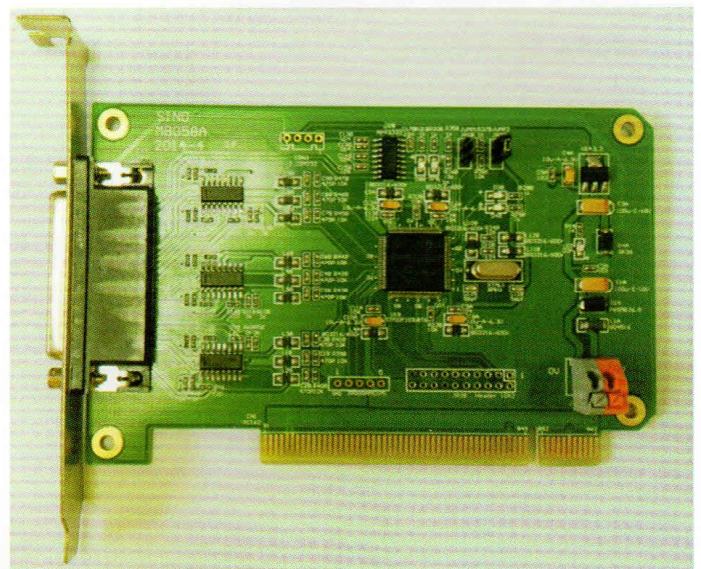


SDC 系列采集卡

SDC series sampling card

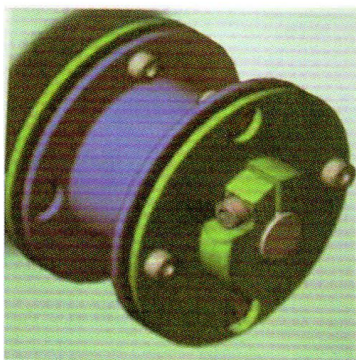
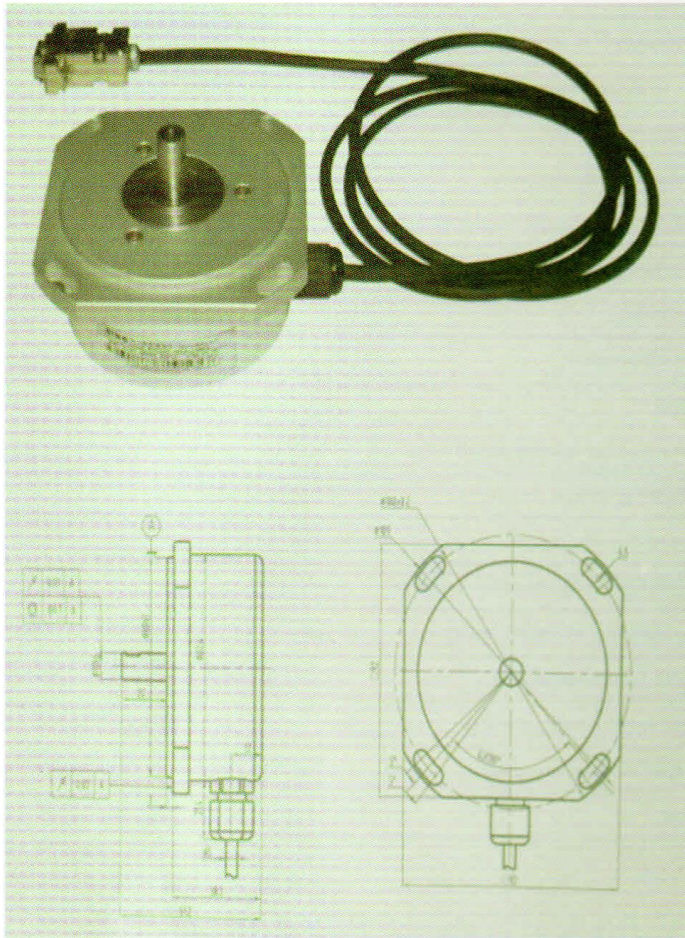
此接口卡是为光栅尺传感器信号采集而设计的，用户只需要将此卡插入PC机的ISA或PCI总线槽，通过本公司提供的专用软件在总线上就可以获得实时三路光栅采集数据，每轴输入频率高达5MHZ，如采用1 μ m分辨率的光栅尺，则采样速度达6m/s以上，可用于三坐标测量机，检测仪器，检测专用装置的高速移动位移的检测和反馈。

This series of card is wholly designed for fathering signals of grating sensor. User can just plug the card into PC, 3-channel grating data can be obtained easily by the software we provide. The sampling rate is up to 5MHZ per channel. Using with 1 μ m Resolution linear encoder, the sampling speed is up to 6m/s. As a result, it can be used for detecting the high-speed displacement of 3-axis measure, checking apparatus and special equipment.



RA-A角度编码器 (增量式)

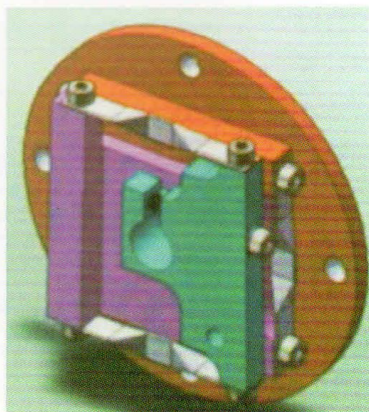
Angle Encoder



JMJ膜片式联轴器

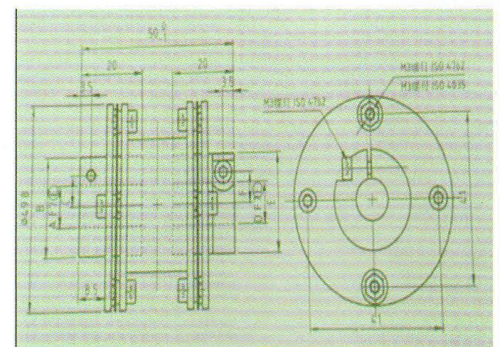
为确保角度编码器的连接精度，诺信公司推荐用户使用以下稳定可靠的JMJ系列和JTP系列联轴器。对于使用其他联轴器，诺信公司不能保证角度编码器的最终使用精度。

规格	1	2	3
A/B/C	10/24/7.5	10/24/7.5	14/28/10
D/E/F	10/24/7.5	14/28/10	14/28/10

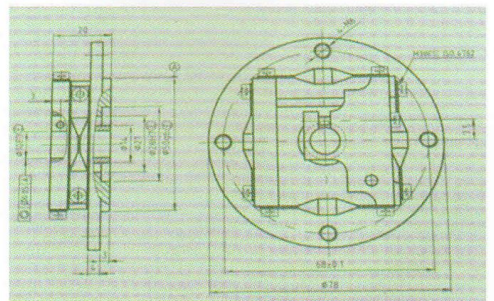


主要特性参数

输出线数 (L/R) Number of outgoing lines (L/R)	45000、90000、80000 (另外可订做线数: 9000、18000、36000、56250、72000、112500、144000、225000、288000、360000、450000)
参考点 Rreference point	一个
准确度 (Axxuracy)	±5" , ±8" , ±15"
工作电压、电流 Operating voltage,current	5V±5%,210mA
电气允许转速 Allowable electric rotating speed	120rpm
输出信号频率 Output signal frequency	最高 200KHz
电缆线长度 Cable length	1.5m (特殊长度可根据用户需要提供)
接口形式 Interface	九芯插头 (轴向或径向出线)
输出信号 Output signal	TTL 信号 RS-422 信号 正弦波信号 ~ 1VPP
机械允许转速 Allowable mechanical rotating speed	≤10000rpm
启动扭矩 Starting torque	≤0.01Nm (20℃时)
转动惯量 Inertia moment	20×10kgm
允许轴负荷 Allowable axla load	轴向: 10N 径向: 10N
抗振 (50 ~ 2000Hz) Vibrationresistance	≤100m/s(IEC 60068-2-6)
抗冲击 (6ms) Shock resistance	≤1000m/s(IEC 60068-2-27)
防护等级 IEC60529 Protection class	IP54
工作温度 Operating temperature	0 ~ 50℃
重量 Weight	约 0.8kg

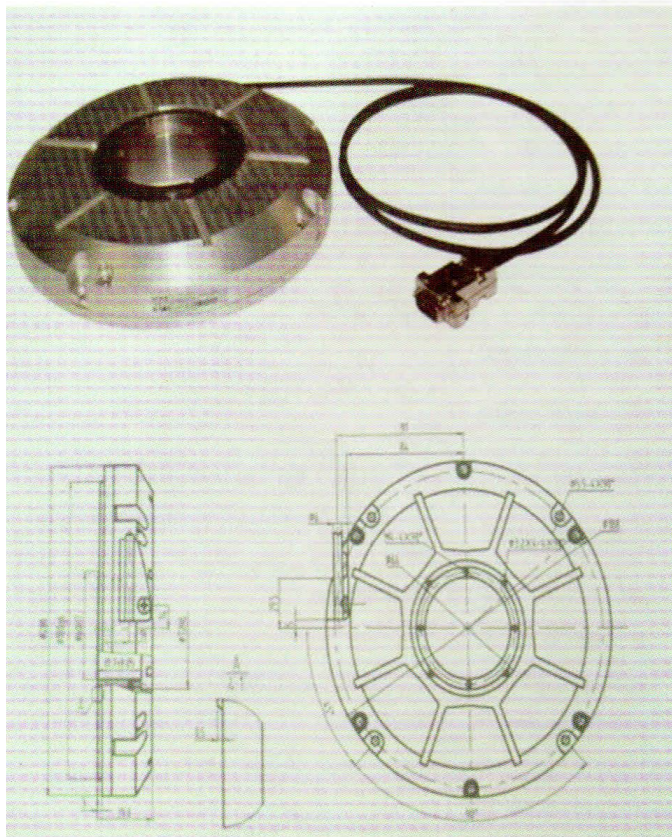


JTP扁平式联轴器 (10-14)



RA-D角度编码器 (增量式)

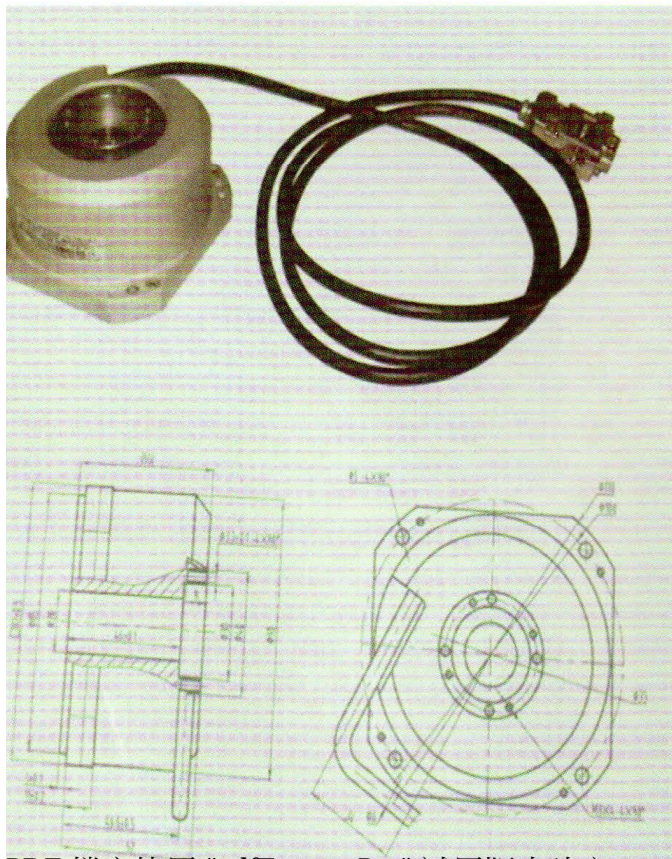
Angle Encoder



输出线数 (L/R) Number of outgoing lines (L/R)	45000、90000、80000 (另外可订做数: 9000、18000、36000、56250、7200112500、144000、360000、450000)
参考点 Rreference point	一个
准确度 (Axxuracy)	$\pm 2.5''$, $\pm 5''$, $\pm 10''$
工作电压、电流 Operating voltage,current	5V $\pm 5\%$,210mA
电气允许转速 Allowable electric rotating speed	300rpm
输出信号频率 Output signal frequency	最高 900HKz
电缆线长度 Cable length	1.5m (特殊长度可根据用户需要提供)
接口形式 Interface	九芯插头 (切向出线)
输出信号 Output signal	TTL 信号 RS-422 信号 正弦波信号 ~ 1
机械允许转速 Allowable mechanical rotating speed	≤ 3000 rpm
启动扭矩 Starting torque	≤ 0.08 Nm(20℃时)
转动惯量 Inertia moment	75 $\times 10$ kgm
被测轴允许的轴向串动 Allowable axle load	$\leq \pm 0.1$ mm
抗振 (50 ~ 2000Hz) Vibration resistance	≤ 100 m/s(IEC 60068-2-6)
抗冲击 (6ms) Shock resistance	≤ 1000 m/s(IEC 60068-2-27)
防护等级 IEC60529 Protection class	IP54
工作温度 Operating temperature	0 ~ 50℃
重量 Weight	约 0.8kg

RA-B角度编码器 (增量式)

Angle Encoder



主要特性参数	
输出线数 (L/R) Number of outgoing lines (L/R)	36000、72000、360000、14000、720000900000、1152000、1800000、2304000
参考点 Rreference point	一个
准确度 (Axxuracy)	$\pm 2''$, $\pm 5''$, $\pm 8''$
工作电压、电流 Operating voltage,current	5V $\pm 5\%$,210mA
电气允许转速 Allowable electric rotating speed	300rpm
输出信号频率 Output signal frequency	最高 900HKz
电缆线长度 Cable length	1.5m (特殊长度可根据用户需要提供)
接口形式 Interface	九芯插头 (切向出线)
输出信号 Output signal	TTL 信号 RS-422 信号 正弦波信号 ~ 1V
机械允许转速 Allowable mechanical rotating speed	≤ 1000 rpm
启动扭矩 Starting torque	≤ 0.5 Nm(20℃时)
转动惯量 Inertia moment	1.4 $\times 10$ kgm
被测轴允许的轴向串动 Allowable axle load	$\leq \pm 0.1$ mm
抗振 (50 ~ 2000Hz) Vibration resistance	≤ 100 m/s(IEC 60068-2-6)
抗冲击 (6ms) Shock resistance	≤ 1000 m/s(IEC 60068-2-27)
防护等级 IEC60529 Protection class	IP54
工作温度 Operating temperature	0 ~ 50℃
重量 Weight	约 3kg

显八大领先技术:

全部系列光栅数显表的允许输入光栅频率A/B相高达5MHZ，达到当今世界水平。

由家采用16位，及32位，计算机技术应用于数显表的专业厂家，令处理速度快和功能强大。

数显表坐标轴最多每轴达600点非线性补偿，测量精度大幅度提升。

数显表可进行直线，斜线、圆弧、连续编程，连续加工。（发明专利）

中国最小外观尺寸的光栅尺KA-200，尺身尺寸为16*16毫米(结构及外形专利)

最新磁尺接长达100m。（有多项自主发明专利）

高速光栅尺分辨率在 $0.1\mu\text{m}$ ，其移动速度在120m/min（发明专利）。

高精度角度编码器是国内首家最产业化，精度高2.0达到国际先进水平。

Eight top-one technologies in the domestic DRO fields

- ▶ Grating digital readout is allowed to input the high frequency A/B signals up to 5MHz, it reaches the worldwide level.
- ▶ The only manufacturer takes 16 bits and 32 bits CPU technology into the digital readout so that the measuring speed is much faster and the function is stronger.
- ▶ The non-linear compensation of each axis of the digital readouts up to 600 points so that the measuring accuracy has been upgraded in a large-scale.
- ▶ Digital readout can supply the function that can combine line, circle program continuously and use in processing (Invention patent)
- ▶ KA-200 series is the smallest size of the Chinese linear encoders, the size of the cross section is only 16X16mm. (Configuration and figuration patent)
- ▶ The newest glass connected scales can reach up to 100M (It had so many invention patents)
- ▶ When the resolution of the high-speed linear encoder is 0.1 micron, the measuring speed of it can be 120m/min
- ▶ In china, Lokshun is the first manufacturer who is special in volume production of the high precision angle encoder, the accuracy within ± 0.01 is the advanced level of the world.

