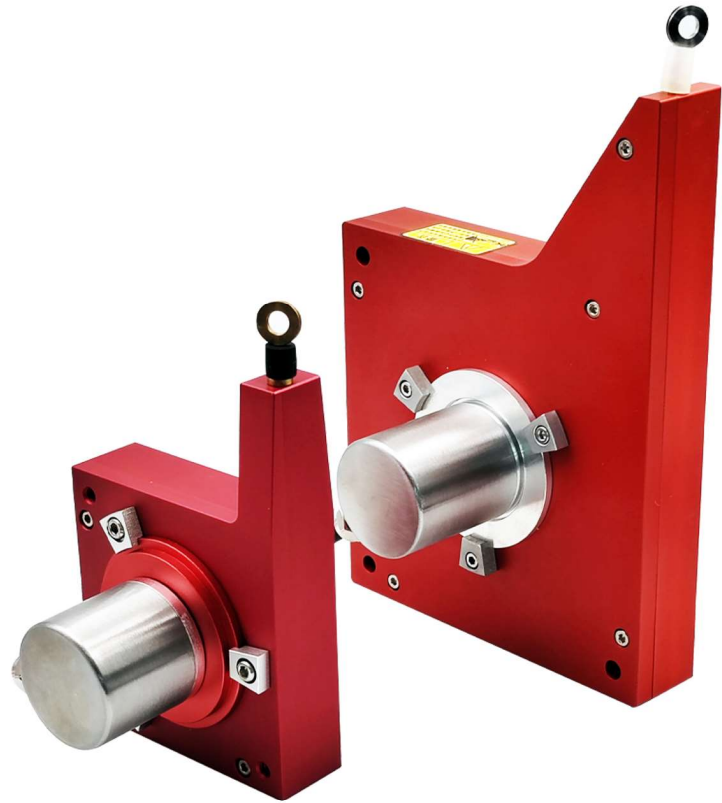


IDENCODER[®]

Make the best encoder in China



ENCODER
IN SMART LOGISTICS INDUSTRY



WEIHAI IDENCODER ELECTRONIC TECHNOLOGY CO.,LTD

IDENCODER ENCODER *MADE IN CHINA*

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APPLICATION OF ENCODER IN SMART LOGISTICS INDUSTRY



With the development of automation and driverless technology,

Various automated logistics equipment have been widely used in the logistics industry;

Adico encoders are used for various automated logistics equipment, such as: unmanned Forklift, hoist, telescopic fork, drum motor, steering wheel, shuttle

Vehicles, AGV trolleys, heavy-duty AGV and other equipment provide speed monitoring and transfer Corner monitoring, distance monitoring and other solutions ensure various automation

The equipment operates safely, quickly and accurately to complete the system release various task instructions.

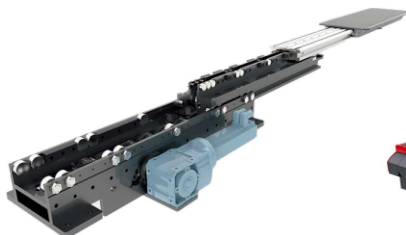
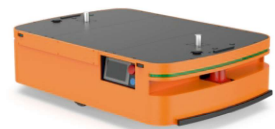
Machinery real multi-turn absolute encoder



Shaft type incremental encoder

Hollow incremental encoder

Draw wire box encoder



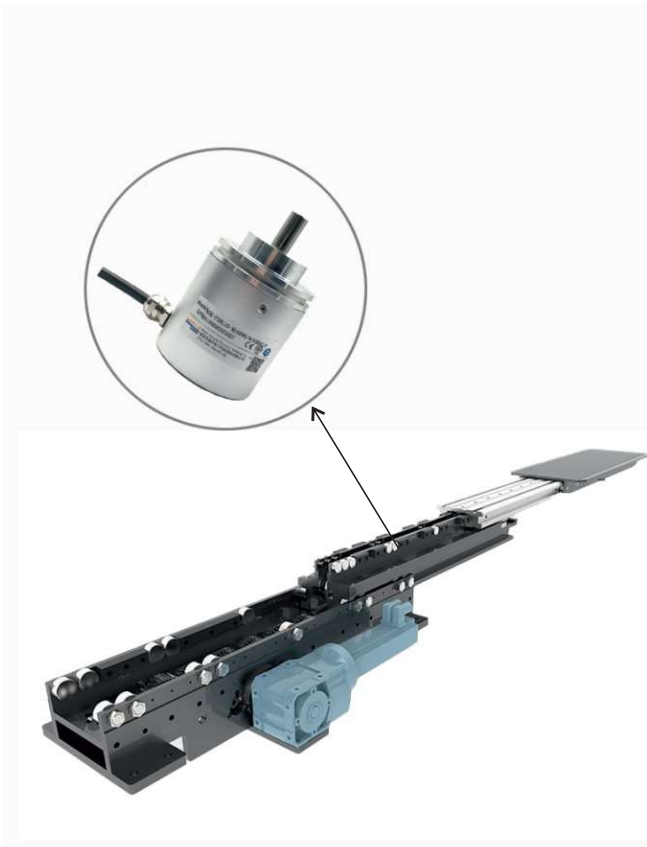
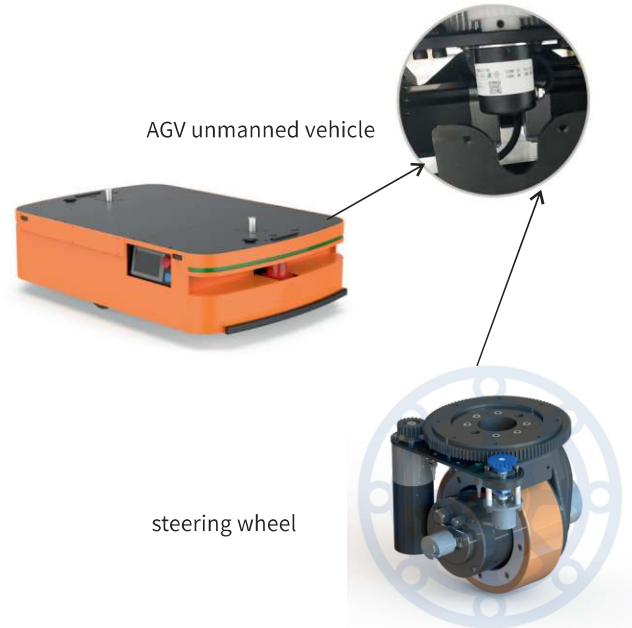
Application of encoder on AGV and steering wheel

Purpose: Measuring the driving speed of AGV vehicles and the steering angle when turning; Measure the steering angle of the steering wheel;

Advantages: small size, high precision, good stability, cost-effective

Encoder selection: multi-turn absolute encoder;
Optional communication protocols: CANopen, Modbus, Profibus, Profinet, EtherCAT, DeviceNet, SSI

Recommended model: ADK-A38L6 series

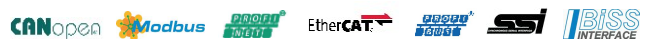


Application of encoder on telescopic forklift

Purpose: Measuring the traveling speed, real-time position, and turning time of telescopic forklifts steering angle;

Advantages: anti-interference, calibrated;
Encoder selection: multi-turn absolute encoder;
Optional communication protocols: CANopen, Modbus, Profibus, Profinet, EtherCAT, DeviceNet, SSI, parallel

Recommended model: ADK-F58B10-MA4096/8192B4PNLP



Application of encoders on heavy-duty AGV vehicles

Purpose: Measuring the driving speed, real-time position, and steering time of heavy-duty AGV steering angle;

Advantages: compact structure, high precision, anti-interference, high transmission rate;

Encoder selection: multi-turn absolute encoder, wire-drawn encoder;




Optional communication protocols: CANopen, Modbus, Profibus, Profinet, EtherCAT, DeviceNet, SSI, parallel

Recommended models: ADK-F58L10 series, ADK-LX20 series, ADK-F58B10 series



Encoder selection recommendations

Multi-turn absolute encoder

| |  |  |  |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Multi-turn absolute encoder | | | |
| Specification | ADK-MEA series electronic multiturn absolute encoder | ADK-MBA series battery multi-turn absolute encoder | ADK-MJA series machine multi-turn encoder encoder |
| Main feature | After the power is off, the number of shaft rotations $\pm 120^\circ$ is effective in memory, no mechanical gears, cost reduction, and high cost performance | battery life 5 years, No mechanical gears, no critical point errors, no program error correction compensation | High reliability, step-by-step calibration procedure, no critical point errors, permanent memory, no worries about breakpoints, long life. Multi-turn copper gear, good material, precise structure |
| Interface | 4-20mA, MODBUS-ASCII/-RTU, serial SSI | 4-20mA, BISS, SSI, MODBUS-RTU, CANopen | 4-20mA, BISS, SSI, MODBUS-RTU, CANopen |
| External diameter | 38mm, 50mm, 58mm | 38mm, 50mm, 58mm | 58mm |
| Shaft diameter | 6mm, 8mm, 10mm, 12mm | 6mm, 8mm, 10mm, 12mm | 10mm, 12mm |
| Max rotary speed | 5000rpm | 5000rpm | 5000rpm |
| Max single turn resolution | 4096 | 8192 | 8192 |
| Max turn quantity | 65536 | 65536 | 4096 |
| Work voltage | 5V, 8-36V | 5V, 8-36V | 5V, 8-36V |
| Output Code form | Binary, Gray code, Gray residual code, BCD code. | Binary, Gray code, Gray residual code, BCD code. | Binary, Gray code, Gray residual code, BCD code. |
| Protection level | IP54/IP65/IP67 | IP54/IP65/IP67 | IP54/IP65/IP67 |
| certificate | ISO9001/ROHS/CE | ISO9001/ROHS/CE | ISO9001/ROHS/CE |

Encoder selection recommendations

| |  |  |  |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Specification | ADK-MA series Modbus type encoder | ADK-DP series Profibus bus type encoder | ADK-PN series Profinet absolute encoder |
| Main feature | RS485 actively sends ASCII protocol, adopts RTU standard, short-circuit protection, anti-axis string, impact resistance, high protection, mainly used in lifting and other industries | high speed low cost.high transmission rate:9.6K~12Mbps.ultra long transmission distance:max 1000m.The repeater can be extended to 10km.Up to 127 sites can be linked | profinet is an Ethernet communication system with the ability to connect products of multiple manufacturers,automation and engineering mode.And optimized for the distributed intelligent automation system.PN is a bus that uses existing IT standards and does not define its dedicated industrial application protocol.Its object mode is based on Microsoft's component (com) technology. The interactive operations with all distributed objects on the network use DCOM and standard TCP and UDP protocols. |
| Interface | CANopen | Profibus-DP | Profinet / EtherCAT / Modbus-TCP |
| External diameter | 38,50,58mm | 58mm | 58mm |
| Shaft diameter | 6mm,8mm, 10mm,12mm | 10mm,12mm | 10mm,12mm |
| Max rotary speed | 5000rpm | 5000rpm | 5000rpm |
| Max single turn resolution | 4096 | 8192 | 8192 |
| Max turn quantity | 4096 | 4096 | 4096 |
| Work voltage | 5V,8-36V | 5V,8-36V | 5V,8-36V |
| Output Code form | | | Binary, Gray code, Gray residual code,BCD code. |
| Protection level | IP54/IP65/IP67 | IP54/IP65/IP67 | IP54/IP65/IP67 |
| certificate | ISO9001/ROHS/CE | ISO9001/ROHS/CE | ISO9001/ROHS/CE |

Application of encoder on shuttle car

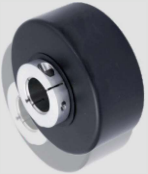

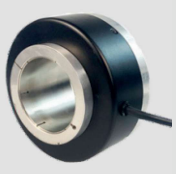
Purpose: Measuring the driving speed of the shuttle and the steering angle when turning;

Encoder selection: large hollow incremental encoder;
Optional output mode: NPN open collector, PNP open collector, Push-pull output, differential output, voltage output Encoder selection recommendations

Recommended model: ADK-KP80 series



Encoder selection recommendations

| General incremental hollow shaft encoder |  |  |  |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Specification | ADK-K80 series | ADK-K90 series | ADK-K100 series |
| feature | big through hollow incremental encoder,high reliable,;long service life.strong anti-interference capability.The lock ring is fixed without keyway, easy to install | big through hollow incremental encoder,high reliable,;long service life.strong anti-interference capability.The lock ring is fixed without keyway, easy to install | big through hollow incremental encoder,high reliable,;long service life.strong anti-interference capability.The lock ring is fixed without keyway, easy to install |
| output form | NPN/PNP open collector,push-pull output.differential output. | NPN/PNP open collector,push-pull output.differential output. | NPN/PNP open collector,push-pull output.differential output. |
| External diameter | 80mm | 90mm | 100mm |
| hole diameter | 30mm/40mm | 30mm/35mm/40mm/45mm | 10mm,12mm |
| resolution | max 5000ppr | max 5000ppr | max 5000ppr |
| output signal | A,B two channel,A,B,Z three,optiona complementary(A-,B-C-)outputs. | A,B two channel,A,B,Z three,optiona complementary(A-,B-C-)outputs. | A,B two channel,A,B,Z three,optiona complementary(A-,B-C-)outputs. |
| work voltage | 5V,8-29V | 5V,8-29V | 5V,8-29V |
| max rotary speed | 5000rpm | 5000rpm | 5000rpm |
| max response rate | 350kHz | 200kHz | 150kHz |
| load | radial direct:10N axis direct:5N | radial direct:30N axis direct:20N | radial direct:50N axis direct:30N |
| protection level | IP54/IP65/IP67 | IP54/IP65/IP67 | IP54/IP65/IP67 |
| environment temperature | -10~70°C | -10~70°C | -10~70°C |
| certificate | ISO9001/ROHS/CE | ISO9001/ROHS/CE | ISO9001/ROHS/CE |

Application of encoder on hoist

Purpose: Measuring the position of the hoist;

Advantages: solid, high reliability, long life, strong environmental resistance;





Encoder selection: hollow incremental encoder;

Optional output mode: NPN open collector, PNP open collector, Push-pull output, differential output, voltage output

Recommended model: ADK-KP60 series



Encoder selection recommendations

| General incremental hollow shaft encoder |  |  |  |  |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Specification | ADK-K38 series | ADK-K44 series | ADK-52 series | ADK-K60 series |
| feature | small size,compact structure, suitable for install in narrow space.can replace Omron and KOYO same type product | through hollow/semi hollow structure.Spring/snap spring installation.max resolution:10000ppr can replace Omron and KOYO same type products | through hollow/semi hollow structure.Spring/snap spring installation.max resolution:10000ppr.can replace Omron and KOYO same type products. | through hollow/semi hollow structure.Spring/snap spring installation max resolution:10001ppr.can replace Omron and KOYO same type products. |
| output form | NPN/PNP open collector,push-pull output.differential output. | NPN/PNP open collector,push-pull output.differential output. | NPN/PNP open collector,push-pull output.differential output. | NPN/PNP open collector,push-pull output.differential output. |
| External diameter | 38mm | 44mm | 52mm | 60mm |
| hole diameter | 6mm/8mm | 8mm/12mm | 8mm/12mm | 8mm/12mm |
| resolution | max10000ppr | max10000ppr | max10000ppr | max10000ppr |
| output signal | A,B two channel,A,B,Z three,optiona complementary(A-,B-C-)outputs. | A,B two channel,A,B,Z three,optiona complementary(A-,B-C-)outputs. | A,B two channel,A,B,Z three,optiona complementary(A-,B-C-)outputs. | A,B two channel,A,B,Z three,optiona complementary(A-,B-C-)outputs. |
| work voltage | 5V,8-30V | 5V,8-30V | 5V,8-30V | 5V,8-30V |
| max rotary speed | 3000rpm | 5000rpm | 6000rpm | 6000rpm |
| max response rate | 200kHz | 200kHz | 150kHz | 150kHz |
| load | radial direct:50N axis direct:20N | radial direct:50N axis direct:20N | radial direct:50N axis direct:20N | radial direct:35N axis direct:15N |
| protection level | IP54/IP65/IP67 | IP54/IP65/IP67 | IP54/IP65/IP67 | IP54/IP65/IP67 |
| environment temperature | -10~70°C | -10~70°C | -10~70°C | -10~70°C |
| certificate | ISO9001/ROHS/CE | ISO9001/ROHS/CE | ISO9001/ROHS/CE | ISO9001/ROHS/CE |

Application of encoders on unmanned forklifts

Purpose: Measuring the lifting height of unmanned forklift;

Advantages: precision, stability, compact size;

Encoder selection: cable encoder;

Optional measuring length: 500mm-10000mm;

Optional output mode: NPN open collector, PNP open collector, Push-pull output, differential output, voltage output

Absolute encoder: CANopen, Modbus, Profibus, Profinet, EtherCAT, DeviceNet, SSI, etc.






Analog output: 4-20mA, 0-10v








Recommended model: ADK60 series



Encoder selection recommendations

| Pull wire displacement sensor |  |  |  |  |  |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Specification | ADK15 | ADK20 | ADK50 | ADK60 | ADK80 |
| size | outside:30*30mm wheel hub:40/50mm | outside:50*35mm thickness:76mm | outside:63*63mm thickness:78mm | outside:80*80mm thickness:86mm | outside:95*95mm thickness:75mm |
| measure for | 0-500mm | 0-1200mm | 0-1500mm | 0-2000mm | 0-2500mm |
| output signal | Incremental:NPN/PNP open collector,push-pull,differential,voltage Absolute:parallel,CANopen,Modbus,Profibus,Profinet,EtherCAT,SSI,4-20mA | | | | |
| Power supply | 5V,5-24V,8-29v | 5V,5-24V,8-29v | 5V,5-24V,8-29v | 5V,5-24V,8-29v | 5V,5-24V,8-29v |
| work type | connect | connect | connect | connect | connect |
| precision | 2‰ | 2‰ | 2‰ | 2‰ | 2‰ |
| Linear tolerance | precision level $\pm 0.1\%$ | precision level $\pm 0.1\%$ | precision level $\pm 0.1\%$ | precision level $\pm 0.1\%$ | precision level $\pm 0.1\%$ |
| power | 2W | 2W | 2W | 2W | 2W |
| Insulation resistance | $\geq 1000\Omega$ | $\geq 1000\Omega$ | $\geq 1000\Omega$ | $\geq 1000\Omega$ | $\geq 1000\Omega$ |
| Wire rope | 0.6mm plastic coated steel wire rope | | | | |
| pull | 2.5N | 3.0N | 3.0N | 4.0N | 4.0N |
| Drawing speed | max 80mm/s | max 100mm/s | max 100mm/s | max 150mm/s | max 200mm/s |
| work life | ≥ 60000 h | ≥ 60000 h | ≥ 60000 h | ≥ 60000 h | ≥ 60000 h |
| shell material | Metal | Metal | Metal | Metal | Metal |
| Surface treatment | anodize | anodize | anodize | anodize | anodize |
| cable length | 1m | 2m | 2m | 2m | 2m |
| protection level | IP54 | IP54/IP67 | IP54/IP67 | IP54/IP67 | IP54/IP67 |
| Work temperature | -25~80°C | | | | |

Draw wire encoder

| Pull wire displacement sensor |  |  |  |  |  |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Specification | ADK90 | ADK100 | ADK120 | ADK315(replace ECN) | ADK33(replace baumer) |
| size | outside:115*115mm thickness:100mm | outside:130*130mm thickness:95mm | outside:147*147mm thickness:130mm | outside:120*120*246mm Wheel circumference:315mm | outside:120*120*246mm Wheel circumference:315mm |
| measure for | 0-3000mm | 0-3500mm | 0-4000mm | 0-5000/7000/10000mm | 0-10000/20000mm |
| output signal | Incremental:NPN/PNP open collector,push-pull,differential,voltage Absolute:parallel,CANopen,Modbus,Profibus,Profinet,EtherCAT,SSI,4-20mA | | | Incremental:100-30000ppr, Resolution:4096turn/single turn 8192ppr Output code:binary code/gray code | |
| Power supply | 5V,5-24V,8-29v | 5V,5-24V,8-29v | 5V,5-24V,8-29v | 5V,5-24V,8-29v | 5V,5-24V,8-29v |
| work type | connect | connect | connect | connect | connect |
| precision | 2‰ | 2‰ | 2‰ | 2‰ | 2‰ |
| Linear tolerance | precision level $\pm 0.1\%$ | precision level $\pm 0.1\%$ | precision level $\pm 0.1\%$ | precision level $\pm 0.1\%$ | precision level $\pm 0.1\%$ |
| power | 2W | 2W | 2W | 2W | 2W |
| Insulation resistance | $\geq 1000\Omega$ | $\geq 1000\Omega$ | $\geq 1000\Omega$ | $\geq 1000\Omega$ | $\geq 1000\Omega$ |
| Wire rope | 0.6mm plastic coated steel wire | | | 1.2mm plastic coated steel wire | |
| pull | 4.0N | 5.0N | 5.0N | 12.0N | 10.0N |
| Drawing speed | max 80mm/s | max 100mm/s | max 100mm/s | max 100mm/s | max 100mm/s |
| work life | $\geq 60000h$ | $\geq 60000h$ | $\geq 60000h$ | $\geq 60000h$ | $\geq 60000h$ |
| shell material | Metal | Metal | Metal | Metal | Metal |
| Surface treatment | anodize | anodize | anodize | anodize | anodize |
| cable length | 1m | 2m | 2m | 2m | 2m |
| protection level | IP54 | IP54/IP67 | IP54/IP67 | IP54/IP67 | IP54/IP67 |
| Work temperature | -25~80°C | | | | |



Attention

1. Before starting the machine, you should carefully check whether the product manual matches the encoder model and whether the wiring is correct.
 2. An elastic soft connection is used between the encoder shaft and the user-end output shaft to avoid damage to the encoder shaft system due to the string movement and beating of the user shaft.
 3. When installing, please observe the permissible shaft loads.
 4. It should be ensured that the misalignment between the encoder shaft and the user's output shaft is $<0.10\text{mm}$, and the deviation angle from the axis is $<1.5^\circ$.
 5. Avoid knocking, dropping and collision during installation.
 6. Do not connect the power cord and ground wire reversely, and live wiring is strictly prohibited.
 7. The grounding wire should be as thick as possible, generally larger than medium 3.
 8. Do not overlap the encoder output lines with each other to avoid damaging the output circuit.
 9. Do not connect the encoder signal line to a DC power supply or AC current to avoid damaging the output circuit.
 10. Motors and other equipment connected to the encoder should be well grounded.
 11. Shielded cables should be used for wiring.
 12. Avoid use in strong electromagnetic environments.
 13. It is strictly prohibited to turn off the power when setting parameters.
-

Warranty information



As long as the user abides by the rules for storage and use of components, within 12 months from the date of shipment, if the product cannot work properly due to quality problems, the company will repair or replace it free of charge for the user. Specifications stated in product catalogs, manuals, or technical documents are subject to change without prior notice. All technical parameters are based on the ordering contract

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