



# ROUNDSS<sup>®</sup>

Industrial Rotary Encoder

## ROTARY ENCODER

Precise speed, distance  
and position detection

## PRODUCT CATALOG

- Absolute Rotary Encoders
- Incremental Rotary Encoders
- MPG & Handwheel
- Linear Encoders



# ROUNDSS<sup>®</sup>

## Industrial Rotary Encoder

Founded in 2006, Changchun Rongde Optics Co., Ltd locating in the optical industry base Changchun, is one of the leading manufacturers of rotary encoders and other related products for speed and angle measurement in industrial automation industry. With 5 subsidiaries in Guangzhou, Wuxi, Shanghai, Beijing and Xi'an as well as more than 30 representative offices around China, and multiple distributors abroad, like Russia, Germany, India, USA, Roundss maintains a presence all around the world.

Roundss with multiple kinds of independent intellectual property rights, has more than 130 employees, including 30 engineers. The 5% of the turnover is invested to product development. As the national high-tech enterprise, Roundss made outstanding contributions to national key projects.

Customer requirement, innovative technology as well as missionary focus, which has been built up over years, all form the basis of Roundss brand and first class products and make Roundss in the front rank of encoder industry. With the encoders production volume 200,000 pcs in 2013, Roundss worked with many global customers, such as FANUC, Bosch, Siemens.

The encoder automatic assembling line was introduced in 2012 for an efficient production. It succeeded in 2015 after the vast energy investment. A new factory with 10000 sq will be finished in 2016, together with the formal use of automatic assembling line, which is the guarantee of our 1,000,000 pcs production target per year.



# Company Appearance



The high quality products are ensured by advanced automation assembling lines technology, dust-free factory, first-class testing equipments. All encoders will be strictly tested according to industrial standard before leaving factory, including high-low temperature test, aging test, fatigue test, accuracy test to assure the reliability and stability of encoders.



**Product Testing**



**Technical Office**



**Factory**

**Changchun Rongde Optics Co.,Ltd**

# Overseas Market

Roundss has participated in numerous international exhibitions to present our innovative products and superior services in front of the world since 2012. Through the constant and active effort of Roundss staff, our products will be approved by more people.



Automation World-Seoul



SPS IPC Drives-Nuremberg



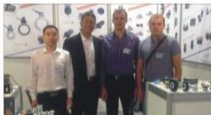
FEIMAFE-Sao Paulo



WIN-Istanbul



IMTEX-Bangalore



METALLOBRABOTKA -Moscow

## International sales partners wanted!

- MOQ: 1 piece
- Customized service
- Maximum benefit of partners
- Free replacement of defective products within 18 months





## PARTNERSHIP

**Rexroth**  
Bosch Group

**REXROTH BOSCH CHINA**

**SIEMENS**

**SIEMENS LTD.**

**FANUC**  
The Robot Experts

**BEIJING FANUC**

**GRI**

**ZHEJIANG GOLDEN FIRE MACHINE CO., LTD**

**BOCHI**  
MACHINE TOOL

**BOCHI MACHINE TOOL GROUP CO., LTD.**

**华大科技**  
excsl-tech

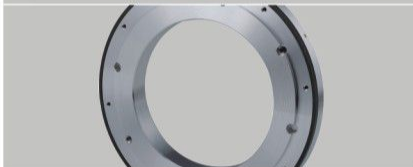
**BGI TECHSOLUTIONS CO., LTD. (BGI-TECH)**

**SMTCL**

**SHENYANG MACHINE TOOL CO., LTD**

**CY**

**YUNNAN CY GROUP CO., LTD**



# ROUNDSS<sup>®</sup>

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## Position and Motion Sensors

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ABSOLUTE ENCODER

INCREMENTAL ENCODER

MANUAL PULSE GENERATOR

MAGNETIC RING ENCODER

OPTICAL BEARINGLESS SPINDLE ENCODER

SERVO MOTOR ENCODER

DIGITAL CODE ROTARY SWITCH

GEAR TOOTH ENCODER

DRAW WIRE SENSOR

FLEXIBLE COUPLING

LINEAR SCALE & DIGITAL READOUT

LENGTH GAUGE

# Absolute Encoder

**ROUNDSS**<sup>®</sup>  
Industrial Rotary Encoder



## **TECHNOLOGIES :**









- Singleturn and multiturn encoders
- Photoelectric sensing technology adopted to ensure high accuracy
- Absolute multiturn encoders with mechanical gear or electronic multiturn stage
- Integrative technology
- Multiple interfaces: SSI, MODBUS, Canopen, parallel or analogue
- Multiple mounting options

## **Applications:**





Aerospace; Radar; Robotic; Military industry; Gears & motors; Wind power



## Single-turn Absolute Encoder

	Outer/shaft Dia(mm)	Resolution (bit)	Accuracy	Operating Voltage	Interface	Max Speed (r/min)	Protection Class	Operating Temp	
RDE58S	 $\phi 38/\phi 6$	10-21	$\pm 20''$	DC5V $\pm 5\%$ /DC9-30V	RS485/RS422/RS232/SSI/BISS	5000	IP64	-20(-40)-+65°C	 RDE50S8
	$\phi 50/\phi 8$	10-17	$\pm 20''$	DC5V $\pm 5\%$ /DC9-30V	RS485/RS422/Parallel/SSI	5000	IP64	-20(-40)-+65°C	
RDE58S10	 $\phi 58/\phi 10$	10-18	$\pm 15''$	DC5V $\pm 5\%$ /DC9-30V	RS485/RS422/RS232/SSI/BISS	5000	IP64	-20(-40)-+65°C	 RDE58T20
	$\phi 58/\phi 20$	10-18	$\pm 15''$	DC5V $\pm 5\%$ /DC9-30V	RS485/RS422/Parallel/SSI	2000	IP64	-20(-40)-+65°C	
RDE94T30	 $\phi 94/\phi 30$	12-20	$\pm 7.5''$	DC5V $\pm 5\%$ /DC9-30V	RS485/RS422/RS232/SSI	2000	IP54	-20(-40)-+65°C	 RDE108T40
	$\phi 108/\phi 40$	12-19	$\pm 10''$	DC5V $\pm 5\%$ /DC9-30V	RS485/RS422/SSI	800	IP54	-20(-40)-+65°C	
RDE165T60	 $\phi 165/\phi 60$	18-22	$\pm 3''$	DC5V $\pm 5\%$ /DC9-30V	RS485/RS422/RS232/SSI	800	IP54	-20(-40)-+65°C	 RDE200T
	$\phi 206/\phi 60-100$	21-24	$\pm 2''$	DC5V $\pm 5\%$ /DC9-30V	RS485/RS422/RS232/SSI	800	IP54	-20(-40)-+65°C	

## Multi-turn Absolute Encoder

	Outer/shaft Dia(mm)	Resolution (bit)	Accuracy	Operating Voltage	Interface	Max Speed (r/min)	Protection Class	Operating Temp	
RDE58S	 $\phi 38/\phi 6$	16/12	$\pm 20''$	DC5V $\pm 5\%$ /DC9-30V	RS485/RS422/RS232/SSI	3000	IP64	-40-+65°C	 RDE58S10
	$\phi 58/\phi 10$	13/12	$\pm 15''$	DC5V $\pm 5\%$ /DC9-30V	RS485/RS422/SSI/BISS/MODBUS/CANopen	3000	IP65	-40-+65°C	
RDE94T30	 $\phi 94/\phi 30$	20/12	$\pm 7.5''$	DC5V $\pm 5\%$ /DC9-30V	RS485/RS422/RS232/SSI/MODBUS	3000	IP54	-40-+65°C	 RDE108T40
	$\phi 108/\phi 40$	19/12	$\pm 7.5''$	DC5V $\pm 5\%$ /DC9-30V	RS485/RS422/RS232/SSI/MODBUS	3000	IP54	-40-+65°C	

Nonmagnetic absolute encoders and customized encoders are available.

Please find the details on website.

# Incremental Encoder

## Versatile, compact and flexible Incremental encoders









- Photoelectric sensing technology adopted to ensure high accuracy
- High precision heavy duty bearing for a long lifetime
- Frequency response up to 400kHz
- Universal mounting dimensions
- High resolution up to 180000 lines on request

**Incremental rotary encoders can be used in all applications that require monitoring rotation rate, speed, acceleration and direction.**





Lift; Textile Machines; CNC Machine Tools; Packing Machines; Conveyor Industry






## Solid Shaft Encoders

	Outer/shaft Dia(mm)	Resolution (ppr)	Operating Voltage	Interface	Output signal	Max Speed (r/min)	Protection Class	Operating Temp	
RCC26S	 $\phi 25/\phi 4$	20-1200	DC5V/8-26V	Open collector, TTL	A.B.Z	6000	IP64	-20~+85°C	
	$\phi 30/\phi 4$	36-1200	DC5V/8-26V		A.B.Z	6000	IP64	-20~+85°C	
RCC38S	 $\phi 38/\phi 6$	30-500	DC5V/8-26V	Open collector, TTL, HTL, RS422	ABZ/A-A, B-B.Z-Z	6000	IP64	-20~+85°C	
	$\phi 50/\phi 8$	100-6000	DC5V/8-26V		ABZ/A-A, B-B.Z-Z	6000	IP65	-20~+85°C	
DTC56S10A	 $\phi 58/\phi 5 - \phi 10$	100-6000	DC5V/8-26V	Open collector, TTL, HTL, RS422	ABZ/A-A, B-B.Z-Z	6000	IP65	-20~+85°C	
	$\phi 58/\phi 5 - \phi 10$	100-6000	DC5V/8-26V		ABZ/A-A, B-B.Z-Z	6000	IP65	-20~+85°C	
RCC58-2S	 $\phi 58/\phi 6 - \phi 10$	100-6000	DC5V/8-26V	Open collector, TTL, HTL, RS422	ABZ/A-A, B-B.Z-Z	6000	IP64	-20~+85°C	
	$\phi 66/\phi 15$	100-6000	DC5V/8-26V		ABZ/A-A, B-B.Z-Z	6000	IP65	-20~+85°C	

## End /Through Hollow Shaft Encoders

DCC38HT	 $\phi 38/\phi 6, \phi 8$	30-5000	DC5V/8-26V	Open collector, TTL, HTL, RS422	ABZ/A-A, B-B.Z-Z	6000	IP54	-20~+85°C	
	$\phi 50/\phi 6 - \phi 12$	30-5000	DC5V/8-26V		ABZ/A-A, B-B.Z-Z	6000	IP54	-20~+85°C	
RCC58HT	 $\phi 58/\phi 6 - 15$	30-5000	DC5V/8-26V	Open collector, TTL, HTL, RS422	ABZ/A-A, B-B.Z-Z	6000	IP54	-20~+85°C	

## Through Hollow Shaft Encoders

REC90B	 $\phi 80/\phi 18-30$	100-5000	DC5V/8-26V	Open collector, TTL, HTL, RS422	ABZ/A-A, B-B.Z-Z	6000	IP52	-20~+85°C	
	$\phi 100/\phi 20-30$	100-5000	DC5V/8-26V		ABZ/A-A, B-B.Z-Z	6000	IP52	-20~+85°C	
REC100B45	 $\phi 100/\phi 30-50$	100-5000	DC5V/8-26V	Open collector, TTL, HTL, RS422	ABZ/A-A, B-B.Z-Z	6000	IP52	-20~+85°C	

Nonmagnetic incremental encoders and customized encoders are available. Please find the details on website.

# Manual Pulse Generator







MPG is applicable to CNC machines by providing HOME position, step adjustment and interrupt signal.

- Precise 90° phase of A and B signals to ensure accurate position control
- Oil and dust proof, and water resistant
- Standard 3 meter spiral cables get through 500,000-1000,000 times stretching test
- Compatible with SIEMENS, FANUC, GSK, Mitsubishi systems









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## Electronic Handwheel

		Body Dimension (mm)	Operating Voltage	Interface	Resolution (ppr)	Housing Material	
RHC80.1		φ60	DC5V	TTL,RS422	25/100	Metal	
		φ60	DC5V	TTL,RS422	25/100	Plastic	
RHC80.4		φ60	DC5V	TTL,RS422	25/100	Metal	
		φ80	DC5V	TTL,RS422	25/100	Metal	
RHC80.2		φ80	DC5V	TTL,RS422	25/100	Metal	
		φ80	DC5V	TTL,RS422	25/100	Plastic	

## MPG Pendant

		Body Dimension (mm)	Axis No	Resolution Switch	Emergency Stop Switch	Enable Switch	Operating Voltage	Interface	Resolution (ppr)	
RSA		164*80*60	X,Y,Z,4.	X1.x10.x100	optional	optional	DC5V	TTL, RS422	25/100	
		190*85*66	X,Y,Z,4.	X1.x10.x100	optional	optional	DC5V	TTL, RS422	25/100	
RSC		127*74*58	X,Y,Z,4.	X1.x10.x100	N/A	N/A	DC5V	TTL, RS422	25/100	
		154*70*54	X,Y,Z,4.	X1.x10.x100	N/A	N/A	DC5V	TTL, RS422	25/100	
RSE		197*85*78	X,Y,Z,4.	X1.x10.x100	N/A	N/A	DC5V	TTL, RS422	25/100	
		154*70*65	X,Y,Z, 4.5.6.	X1.x10.x100	optional	N/A	DC5V	TTL, RS422	25/100	
RSG		167*90*70	X,Y,Z, 4.5.6.	X1.x10.x100	optional	optional	DC5V	TTL, RS422	25/100	
		167*90*70	X,Y,Z, 4.5.6.	X1.x10.x100	optional	optional	DC5V	TTL, RS422	25/100	



# Magnetic Ring Encoder

- Applicable to CNC machine tools.
- Noncontact measurement. Long life.
- With the same advantage as integrated encoder.
- High protection class IP65.
- No need to change the original construction of machine tools when mounting.
- Mount it at the position of original synchronous pulley.
- Mount readhead and ring separately.

	Outer Dia./ Max Hole(mm)	Resolution (ppr)	Interface	Output Signal	Operating Voltage	Max Speed (r/min)	
RTD82	φ 82/φ 80	128-16384	RS422	A.-A.B.-B.Z.-Z.	DC5V	12000	RTD115
	φ 115/φ 85	128-16384	RS422	A.-A.B.-B.Z.-Z.	DC5V	12000	
RTD122	φ 122/φ 90	128-16384	RS422	A.-A.B.-B.Z.-Z.	DC5V	12000	RTD163
	φ 163/φ 135	128-16384	RS422	A.-A.B.-B.Z.-Z.	DC5V	12000	

# Optical Bearingless Spindle Encoder

- Applicable to CNC machine tools
- Bearingless design for prolonging service life; Low failure rate, stable and reliable; Optical structure with high anti resistance; Higher vibration resistance.
- Adjustable axial mounting range; Easy Mounting without aid of mounting accessory. Low maintenance cost; Stable installation construction.
- The processing efficiency of machine tools increased (10000rpm). Completely synchronous with machine tool spindle without synchronous pulley.

	Outer Dia./ Max Hole(mm)	Resolution (ppr)	Interface	Output Signal	Operating Voltage	Max Speed (r/min)	
STS185T	φ 185/ φ 76/95/100	1024	RS422	A.-A.B.-B.Z.-Z.	DC5V±0.25V	10000	STS250T
	φ 256/ φ 130	2048	RS422	A.-A.B.-B.Z.-Z.	DC5V±0.25V	8000	







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# Servo Motor Encoder



Servo motor encoder is mounted to servo motor to measure the position of magnetic poles, and report angle and speed information of motor.

- Ultra-thin design
- Straight shaft and taper shaft are optional
- With high sensitive photosensitive components, high frequency response
- Square wave and RS485 output with UVW signals
- Max resolution to 32 bit

	Outer/shaft Dia.(mm)	Resolution	Operating Voltage	Interface	Output Signal	Max Speed (r/min)	Protection Class	Operating Temp	
DVC37T	 $\phi 37/$ $\phi 8. \phi 9$	2500 ppr	DC5V	RS422	U-U.V-V.W. -W.A-A.B.-B. Z-Z	8000	IP50	-20→+85°C	 DVC48T
	 $\phi 48/$ $\phi 8. \phi 9$	1000-8000ppr	DC5V	RS422	U-U.V-V.W. -W.A-A.B.-B. Z-Z	8000	IP50	-20→+85°C	
DVA48T	 $\phi 48/$ $\phi 8. \phi 9$	17X16bit	DC5V	RS422	Binary	8000	IP50	-20→+85°C	



# Digital Code Rotary Switch

Rotary switch with multiple switching functions are applicable to the machine tool's operation panel for axis selection, feed rate and override, etc.

- Solid metal housing and clear graduation
- 15, 30, 13.85 degrees for options
- With firm and skid-proof shafts
- Including inhibit and parity signal to avoid error occurrence
- Metal (Gold) coating contact points for stable and highly effective performance
- Waterproof design (IP65) and built-in O-ring
- Design for easy installation
- Saving wiring operation and input signal point



	Digital Code	Starting Position	End Position	Gear Angle	Connection Type
<b>RDN</b>	Hexadecimal Code/ Binary Cyclic Code	*, 0-	*, 0-	13.85/15/ 30/20/27.89	Vertical Plug Horizontal Plug

# Gear Tooth Encoder



Standard gear: 128 gears and 256 gears are available. The sensor is internally biased with a permanent magnet and detects the interaction from an external ferrous gear wheel. And it outputs 1VPP or TTL(RS422 Line Driver) after signal amendment and division.

## FEATURES:

- The non-contact, frictionless design ensures long-term reliability and simple installation
- Direct transmission to avoid the backlash.
- 0.3mm, 0.4mm, 0.5mm modules are optional.
- High frequency response 0-6000KHZ. 1VPP and TTL output signal.
- Compact built-in inductive head applicable to small installation space.
- High protection class (IP68) for harsh environment.
- Stable positioning precision of quick drilling and tool change.

	Outer/shaft Dia.(mm)	Resolution (ppr)	Interface	Output Signal	Operating Voltage	Max Speed(r/min)
<b>RDG</b>	φ30-φ513 Optional	128-4096	1Vpp/TTL	A.-A.B.-B.Z.-Z.	DC5V	12000






# Draw Wire Sensor

Draw wire displacement sensor is particularly suitable for linear guide systems, hydraulic cylinder system, testing machines, telescopic system, storage location positioning, pressure machinery, paper machinery, textile machinery, sheet metal machinery, packaging machinery, printing machinery, level control device, construction machinery and other related dimensional measurement and position control. Draw wire sensor is of low-cost but high-precision, which can replace optical grating encoder.






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## Incremental Type Draw Wire Sensor

	Body Dimension (mm)	Output Type	Range (mm)	Resolution (ppr)	Linearity	Interface	Operating Voltage	Protection Class	
RLC40D	 40*40	Digital output	0-800	1000-5000	0.05%FS	Open collector, TTL,HTL, RS422	DC5V/8-28V	IP54	
	50*50	Digital output	0-1500	1000-5000	0.05%FS				
RLC80D	 63*63	Digital output	0-2500	1000-5000	0.05%FS	Open collector, TTL,HTL, RS422	DC5V/8-28V	IP54	
	78*78	Digital output	0-3000	1000-5000	0.05%FS				
RLC95D	 95*95	Digital output	0-4000	1000-5000	0.05%FS	Open collector, TTL,HTL, RS422	DC5V/8-28V	IP54	

## Analog Type Draw Wire Sensor

	Body Dimension (mm)	Output Type	Range (mm)	Linearity	Output signal	Operating Voltage	Protection Class	
RLP40S	 40*40	Analog output	0-500	0.1%-0.05%FS	0-5V/0-10V/ 4-20mA/0-5K/0-10K	DC5V/12V/24V	IP54	
	50*50	Analog output	0-1000	0.1%-0.05%FS	0-5V/0-10V/ 4-20mA/0-5K/0-10K			
RLP63S	 63*63	Analog output	0-1600	0.1%-0.05%FS	0-5V/0-10V/ 4-20mA/0-5K/0-10K	DC5V/12V/24V	IP54	
	78*78	Analog output	0-3000	0.1%-0.05%FS	0-5V/0-10V/ 4-20mA/0-5K/0-10K			
RLP95S	 95*95	Analog output	0-4000	0.1%-0.05%FS	0-5V/0-10V/ 4-20mA/0-5K/0-10K	DC5V/12V/24V	IP54	

## Multi-turn Absolute Type Draw Wire Sensor

	Body Dimension (mm)	Output Type	Range (mm)	Resolution (bit)	Linearity	Interface	Operating Voltage	Protection Class
RLA	 Optional	Digital output	0-5000	13*12	0.05%FS	SSILCANopen, RS485,Modbus	DC5V/8-28V	IP54

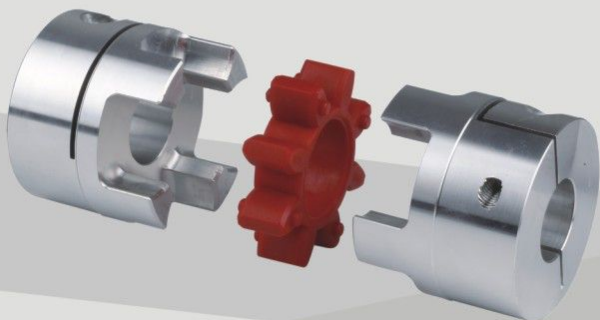
# Flexible Coupling

Coupling is a mechanical part, used to connect two different shafts (drive shaft and the driven shaft) to rotate together to transmit torque.

In the high-speed heavy-duty power transmission, some couplings also have the functions of cushioning, vibration and improving the dynamic performance of shafting. Composed by two coupling halves, respectively, with the drive shaft and the driven shaft coupling.

Most of the general power machine connects with the machine by means of couplings.

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	Type	Outer Dia. (mm)	Length (mm)	Standard Bore(mm)	
RD1-C	 Spider Clamp Flexible Coupling	20-105	30-140	3-60	
	Spider Screw Flexible Coupling	20-105	30-140	3-60	
RD2-AS	 Single Diaphragm Clamp Coupling	34-82	27.3-68	4-32	
	Double Diaphragm Clamp Coupling	34-82	37.8-98	4-32	
RD2-BS	 Single Diaphragm Clamp Coupling	26-82	23.15-68	4-45	
	Double Diaphragm Clamp Coupling	26-82	32.3-98	4-45	
RD2-CD	 Expansion Bushing Double Diaphragm Clamp Coupling	70-100	78-87	19-60	
	Single-wall Bellows Clamp Coupling	16-32	26.5-42	4-14	
RD9-B	 Double-wall Bellows Clamp Coupling	17-99	31.5-100	3-54	
	Expansion Bushing Bellows Clamp Coupling	40-82	55-88	10-38	
RD4-S	 Helical Screw Coupling	16-51	22-50.8	3-19	
	Helical Clamp Coupling	16-51	22-51	3-19	
RD5-AD	 Metal Plate Spring Coupling	42	39	6-15	
	Parallel Screw Coupling	13-25	22-32	4-10	
RD6-B	 Fiber Glass Screw Coupling	13-25	22-32	4-10	
	Otham Clamp Coupling	16-50	18-58	3-20	
RD7-S	 Otham Screw Coupling	16-50	18-58	3-20	
	Parallel Clamp Coupling	12-63	18.5-90	4-18	
RD8-S	 Parallel Screw Coupling	12-63	18.5-90	4-18	



# Linear Scale



A linear encoder is a sensor, transducer or readhead paired with a scale that encodes position.

The sensor reads the scale in order to convert the encoded position into an analog or digital signal, which can then be decoded into position by a digital readout (DRO) or motion controller.

Linear scales are widely used on lathe, milling machine, grinding machines.

	MesuringRange(mm)	Resolution	Operating Voltage	Interface		
RLM		1000-3000	1u/5u	DC5V/8-26V	TTL,RS422	RLS
		0-1000	1u/5u	DC5V/8-26V	TTL,RS422	

# Digital Readout



A digital readout (DRO) is a display unit which reads the signals generated by the linear encoder (or less frequently by rotary encoders) installed to several machine axes, used to display the position, speed and angle of workpiece (milling and the like) or tool (lathes and grinders).

Body Dimension	Display Range	Axis No	Display Mode	Operating Voltage	Interface
26.5*18cm	8LED	2/3	Digital	AC110~240V	TTL square wave

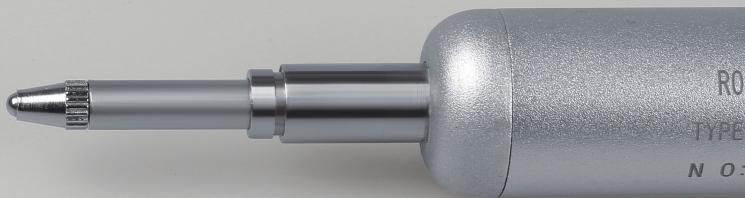
# Length Gauge

Length gauge is a high-precision macro-measuring instrument for many industrial applications and testing organizations.

Following the Abbe principle and high-precision linear gratings measuring standard, it is designed to ensure the best mechanical and thermal stability.

Length gauge is widely used in a variety of applications, including precision workpiece detection, multi-point detection, measuring equipment monitoring and position measurement.

RDC	Measuring Range	Operating Voltage	Resolution
	0-16.8mm	DC5V ±5%	1μ



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## Changchun Rongde Optics Co.,Ltd

Add: No.816-2,Pudong Road,Economic Development  
District,Changchun 130033,China

Tel:+86-431-81856009

Fax: +86-431-85256892

Email: [info@roundss.net](mailto:info@roundss.net)

[www.roundssencoder.com](http://www.roundssencoder.com)

