

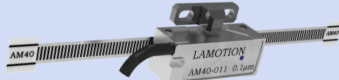



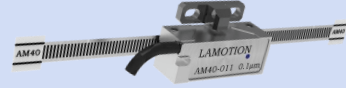




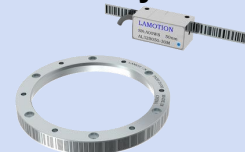
Parameters of Open Optical Linear Encoders

Linear Encoders	Incremental			Absolute
Item	RU2 Series 	RX2 Series 	AM4 Series 	ABS Series 
Size(mm) L*W*H	36*16.4*14.4	36*16.4*14.4	34*13*11.6	36*16.5*18.4
Power	5V±10% 150mA	5V±10% 150mA	5V±10% 300mA	5V±10% 250mA
Output Singal	TTL	TTL sine/cosine1Vpp	TTL	BISS_C letter of agreement
Resolution	1μm~20nm	1μm~10nm	1μm, 0.5μm	500nm, 100nm, 50nm
Electronic subdivision error	< 40nm	< 40nm	< 80nm	< ±150nm
Max speed	5m/s	5m/s	2.5m/s	15m/s
Cable outer diameter	4.6mm double shielded cable	4.6mm double shielded cable	3.0mm double shielded cable	4.6mm double shielded cable
Number of bends	10 million times	10 million times	20 million times	10 million times
Operating temperature	-10°C~+70°C	-10°C~+70°C	0°C~+70°C	0°C~+50°C
Class of protection	IP40	IP40	IP40	IP40



Parameters of Open Optical Linear Encoders

Linear Scales	Incremental			Absolute
Item	RU2 Series 	RX2 Series 	AM4 Series 	ABS Series 
Matching stainless steel tape	RUS stainless steel tape	RXS stainless steel tape	M4 stainless steel tape	ALZ stainless steel tape
Grid pitch(μm)	20	20	40	50
Accuracy	$\pm 5\mu\text{m}/\text{m}$	$\pm 5\mu\text{m}/\text{m}$	$\pm 10\mu\text{m}/\text{m}$	$\pm 10\mu\text{m}/\text{m}$
Grating scale size (includes stickers) (MM)	8*0.4	8*0.4	6*0.2	8*0.4
Reference origin (Option)	Magnetic switch at the bottom of the reading head	Optical sensor	Magnetic sensor on the side of the reading head	Customize
Material	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Max length(M)	40	40	40	35

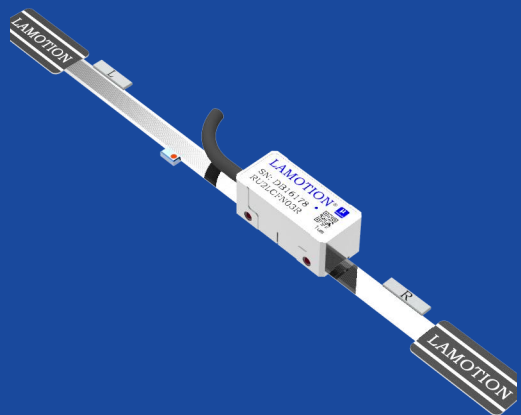
Parameters of Rotary Scales

	Incremental	Absolute
Item	PI20 Rotary scale 	PA50 Rotary scale 
Grid pitch(μm)	20	50
Diameter(φ)	75/100/150/200/300	75/100/150/200/300
Rang of Accuracy	2.3-9.5arcesec	2.3-9.5arcesec
Reference origin (Option)	1 optical zero point	/
Number of lines	11840-47200	/
Material	Stainless steel	Stainless steel
Matching Reading Head	RX2	ABS

Optical Encoders

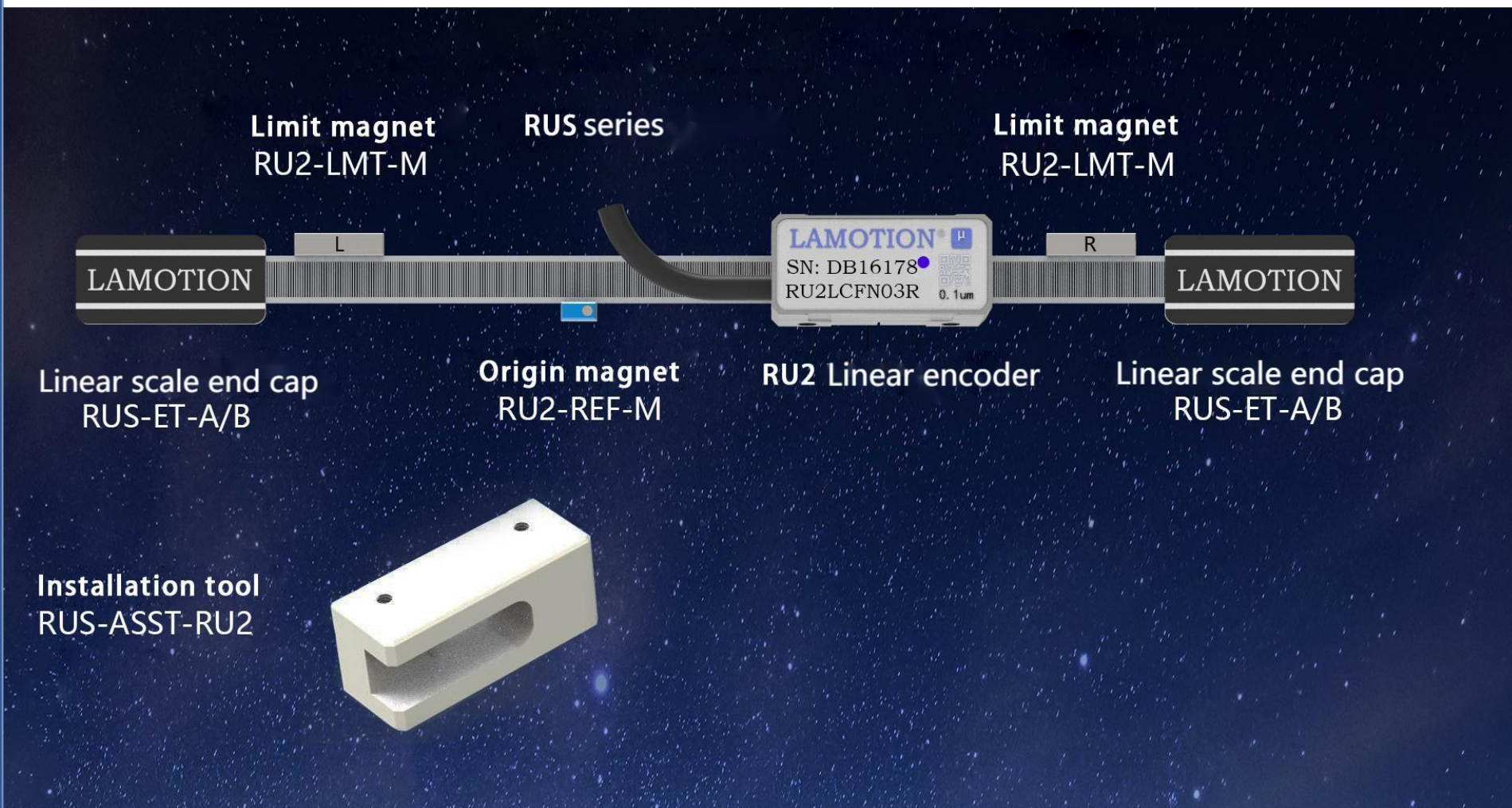
Item	RX2	ABS
		
Resolution	1μm~10nm	18 bit,23 bit,26 bit
Max rotation speed(R/H)	300-1200	1500-8000
Output Singal	TTL sine/cosine1Vpp	BISS_Cletter of agreement
Electronic subdivision error	< 40nm	< ±150nm
Cable outer diameter	4.6mm double shielded cable	4.6mm double shielded cable
Number of bends	10 million times	10 million times
Operating Temperature	-10°C~+70°C	-10°C~+50°C
Class of protection	IP40	IP40

RU Series Position Encoders



RU series consists of incremental optical encoders and linear scales.

The RU2 incremental optical encoders adopts large-area single-field scanning technology to ensure its excellent anti-pollution ability, and the large installation spacing of 2mm ensures fast installation and greater tolerance. Real-time automatic gain control ensures the stability of work in various environments. Up to 1000 times internal subdivision can meet the needs of various controllers. Phase grating and single-field scanning ensure excellent Lissajous-Figur while ensuring anti-pollution, reducing subdivision errors.

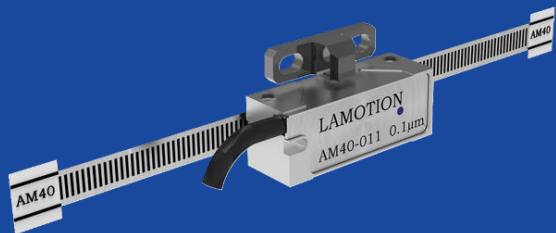




RXS high-precision stainless steel scale adopts high-precision, super-hard, high-elastic and corrosion-resistant special substrates. The excellent mechanical and chemical properties of the substrates ensure its long-term stability and reliability; RXS high-precision stainless steel scales use advanced engraved lines. The advanced technology can achieve fine scribing of 20 micron pitch grid lines and ensure a scribing error of less than 40 nanometers. The ruler body comes with adhesive backing, and the ruler can be quickly installed with a sticking tool.



AM4 Series Position Encoders



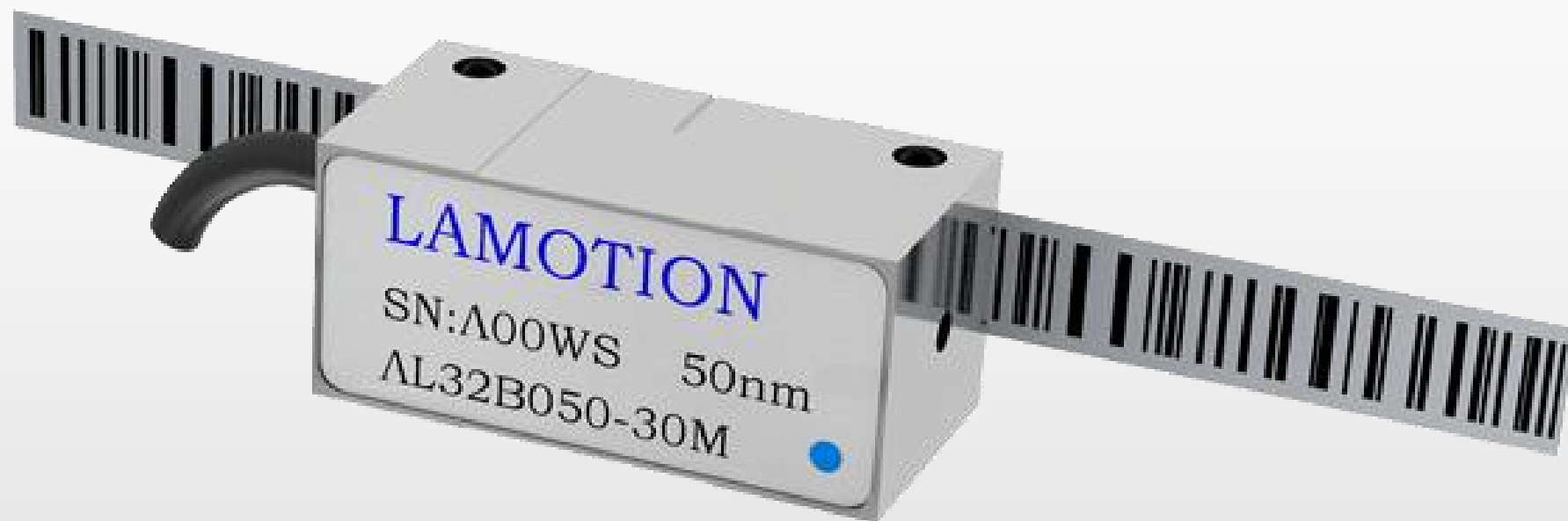
AM4 series open optical encoder is a compact grating for high dynamic precision system, single-field scanning application and low-latency subdivision processing, so that it has excellent dynamic performance. The AM4 series readhead is compatible with the M4 series ultra-thin stainless steel scale with a $40\mu\text{m}$ grating pitch, and the expansion coefficient is exactly the same as that of the substrate. There is no need for separate temperature compensation. Corrosion-resistant, wear-resistant scale, high-strength scale, can effectively prevent damage to the scale, making it still applicable in places with harsh environments. The scale surface is uncoated and when contaminated, the scale can be cleaned with solvents.



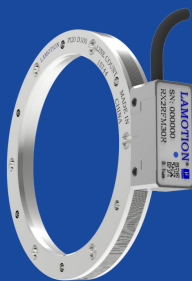
ABS series Absolute Position Encoders



ABS series absolute encoders do not require batteries and have good dirt resistance against light dust, scratches and oil stains. It is available in three resolutions of 50nm, 100nm and 500nm. Absolute encoders can read in both forward and reverse directions, and the counting direction is determined by the direction of the dial. It's quick and easy when it comes to installing it. It uses a built-in location verification algorithm to improve security.



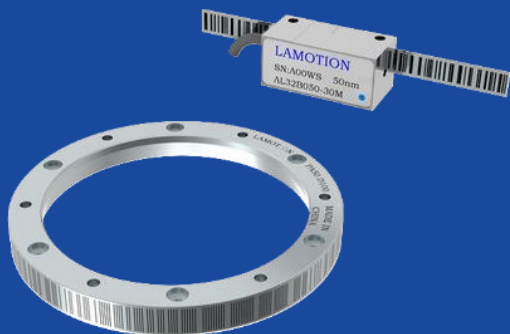
PI20 series Incremental Rotary Encoders



The PI20 series are one-piece stainless steel ring encoders with 20 micron increments of pitch and an optical reference zero engraved on the ring face. It can provide four diameter specifications are 75, 100, 150, 300 mm. The ring encoder is installed with high precision, adopts a tapered mounting system, reduces the need for high-tolerance machined parts, and eliminates eccentricity, and has the characteristics of large inner diameter and flexible installation. This non-contact form eliminates backlash, torsional errors, and other mechanical hysteresis errors inherent in traditional enclosed encoders.



PA50 series Absolute Rotary Encoders



The PA series is a stainless steel ring with true monorail absolute position codes etched on its outer surface. It uses ABS series absolute encoders to read data, and has good anti-fouling ability, which can resist slight dust, scratches, and oil pollution. The PA rotary scale has excellent precision, with a resolution of 0.019 arc seconds, and is suitable for high-precision scene applications. The PA rotary scale also has the characteristics of thin size, large inner diameter, easy integration, small mass, and small inertia, and is widely used in a wide range of application fields.

