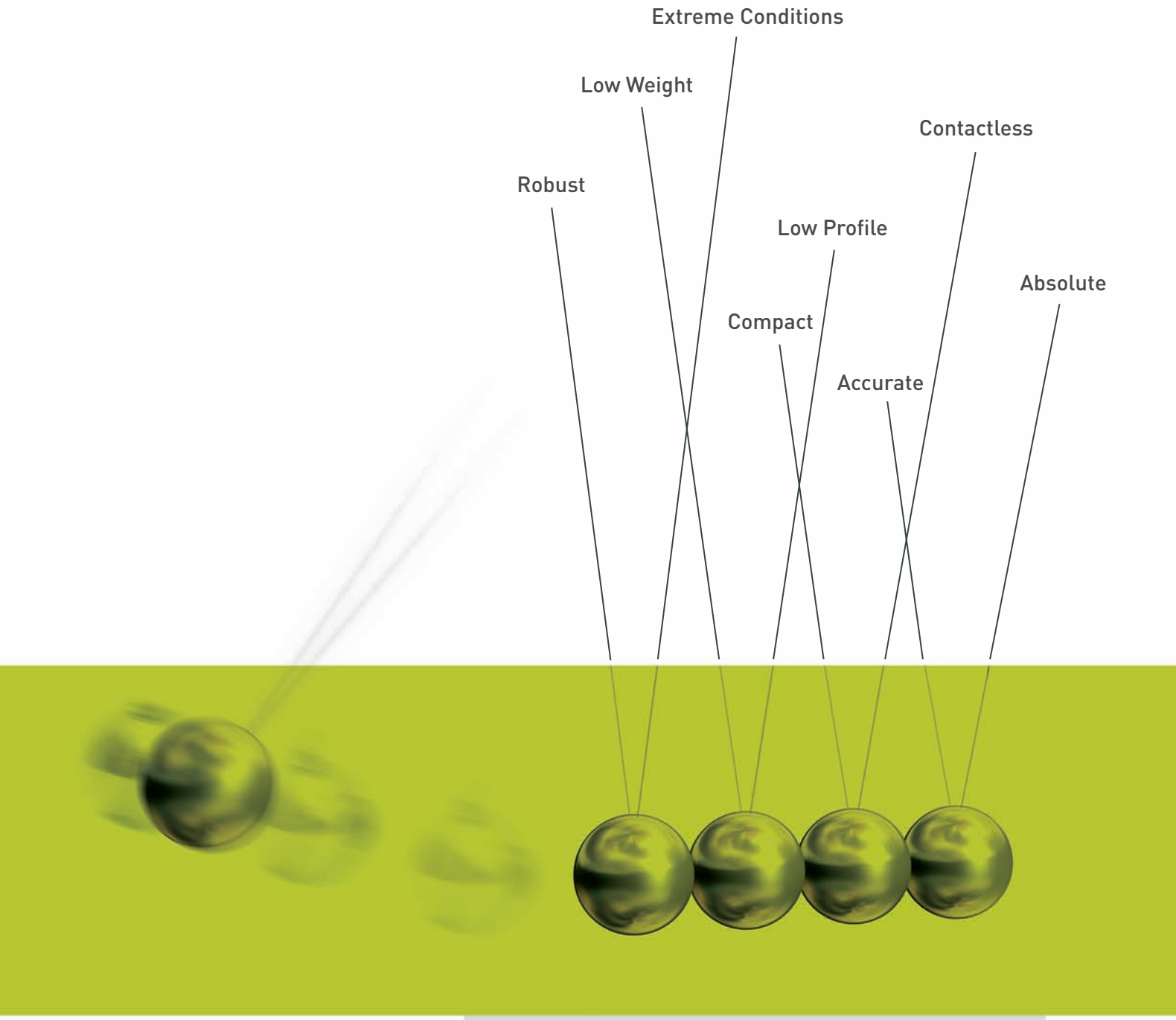


The Genius of Simplicity

Netzer
Precision Motion Sensors Ltd.

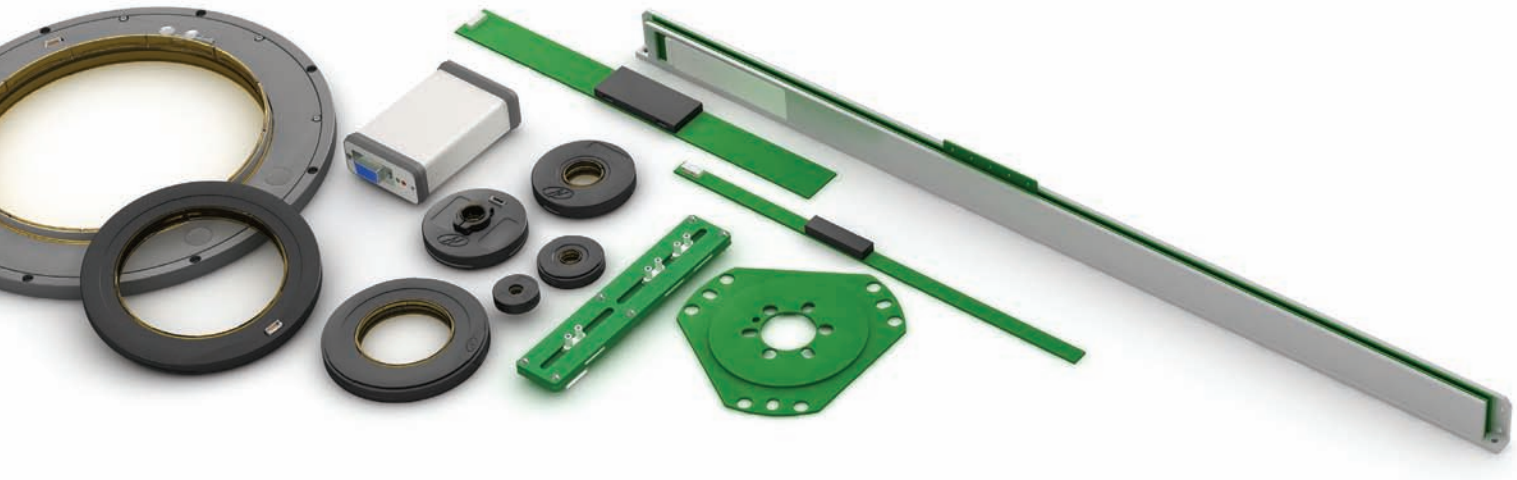
Automotive

Medical

Communication

Encoder Technology for 21st Century

Rotary and linear, absolute and incremental, analog and digital, standard and customized, Netzer's worldwide patented ,rugged ,high performance ,Electric Encoder™ technology suits applications ranging from space and avionics, through defense and instrumentation to automotive.



Electric Rotary Encoders™

High resolution and accuracy absolute position.

Electric Linear Encoders™

Cabled or Cable-free absolute position.

Custom Encoders

Absolute position ultra low profile and mechanical flexibility.

The Electric Encoder™ Advantages

Mechanical

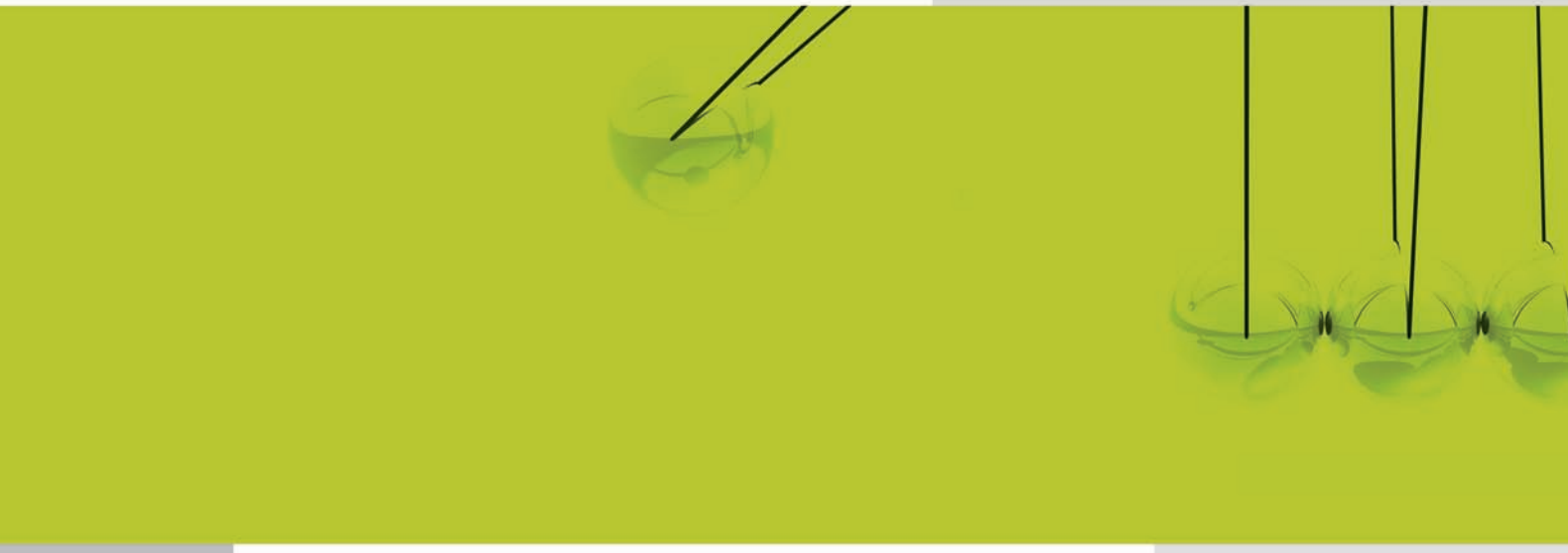
- Low Profile
- Hollow Floating Shaft
- Mounting Tolerant
- Low Weight and Inertia

Functional

- Absolute Position
- High Resolution
- High Accuracy
- Low Power Consumption
- Redundancy Options

Reliability

- Extreme Temperatures
- Shock and Vibration Tolerance
- High MTBF
- Tolerant to EMI / RFI / Magnetic Fields



ROTARY

	DS-25
Functional	
Electrical Cycles/Revolution – Fine Mode	16
Angular resolution (using , 12bit A/D converter)	17 bits
Accuracy	< ±0.03°
Maximum usable speed	3,000 rpm
Output signal latency (group delay)	250 µs
Fine-mode output amplitude	±0.5V ±10%
Fine-mode output noise (DC to 1kHz ,p-p)	< 100 µV
Measurement range	Full rotation - 360°
Mechanical	
Mounting eccentricity - working	±0.2 mm
Rotor axial motion - working	±0.2 mm
Rotor inertia (gr∗mm^2)	11
Total weight	4 gr
Outer diameter / Inner diameter / Profile (mm)	25 / 6 / 7
Construction material (stator / rotor)	Reinforced Ultem™
Electrical connection	Loose wires

Electrical	
Supply voltage	+4.6 to +5.5 v
Supply current	< 10 mA
Maximum load current.	10 mA
Output resistance	< 1 Ω
Environment	
EMC	IEC 6100-6-2, IEC 6100-6-4
Operating temperature range	-55°C to +125°C
Relative Humidity	< 98% non condensate
Shock endurance	IEC 60068-2-27; 100 gm for 11 ms
Vibration endurance	IEC 60068-2-6; 20 gm for 10 – 2000 Hz

Analog Sine / Cosine					
	DS-37	**DS-58 DS-58-20**	**DS-90**	**DS-130**	**DS-247**
	16	32	64	64	128
	17 bits	18 bits	19 bits	19 bits	20 bits
	< ±0.03º	< ±0.03º	< ±0.01º	< ±0.01º	< ±0.01º
	3,000 rpm	1,500 rpm	750 rpm		
	250 µs				
	±0.5V ±10%				±1V ±10%
	< 100 µV	< 150 µV	< 100 µV	< 200 µV	
	Full rotation - 360º				
	±0.2 mm	±0.3 mm			±0.2 mm
	±0.2 mm	±0.4 mm			±0.1 mm
	76	800	5200	2400	
	10 gr	36 gr	50 gr	65 gr	665 gr
	37 / 10 / 8	58 / 12.7 / 17 58 / 20 / 10	90 / 50 / 10	130 / 90 / 10	247 / 170 / 10
	Reinforced Ultem™				Aluminum + Ultem™
	Loose wires	Loose wires, 6 or 12 pins connector			6 pins connector

Output Options	
	Type
Digital	Virtual homing
	AqB + index
	SSI
Analog	Sine/Cosine
	Resolver emulation

Note:
please refer to the data sheet's for latest updates.

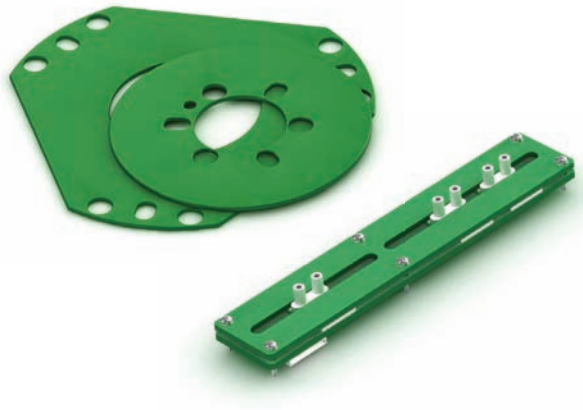
LINEAR

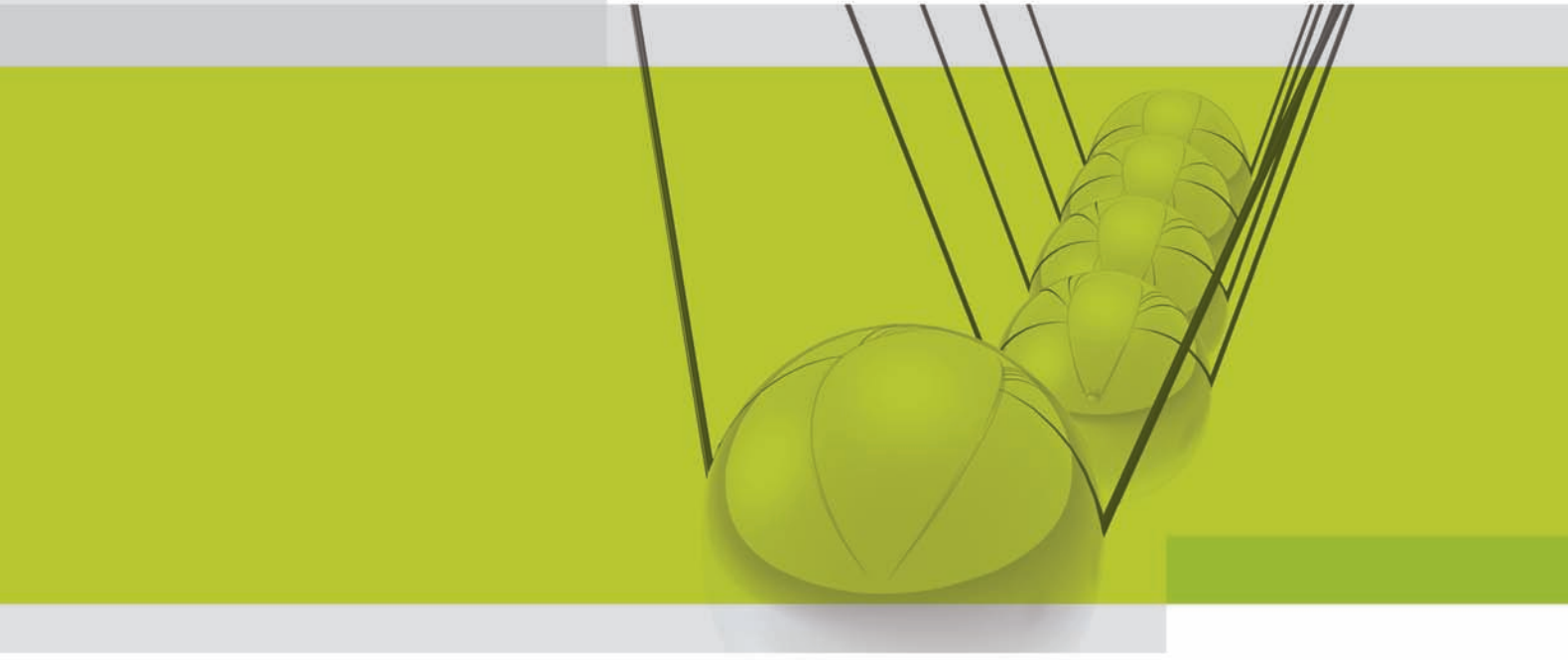
Interface	Sine / Cosine		Digital
	LA-10	**LA-60**	**LE2C**
Functional	2 cables		Cable free read head
Period length – Fine Mode	4 mm		
Resolution (using 12bit A/D converter)	1 µm		
Accuracy	< 20 µm		< 15 µm
Usable speed - max	4 m/sec		
Output signal latency (Groupe Delay)	60 µs		100 µs
Fine-mode output amplitude	±0.5V ±10%		
Fine-mode output noise (DC to 1kHz)	< 80 µV		
Mechanical			
Measuring length - max	600 mm		
Air gap	0.8 ±0.1 mm		
Read head weight	4 gr	8 gr	4 gr
Read head dimensions (mm)	40 x 10 x 6	60 x 25 x 6	64 x 35 x 1
Material	Ultem™		Aluminum
Electrical connection	6 pins connector		12 pins connector

CUSTOM

Electrical Rotary and Linear Encoders

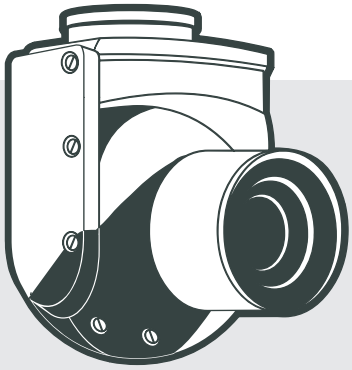
The Netzer Electric Encoder™ flexibility lends itself to easy customization offering unmatched design freedom, performance, and cost effectiveness.
The Netzer Electric Encoder can be customized in terms of mechanical dimensions, resolution, accuracy, packaging, power consumption, and adaptation to various environments.

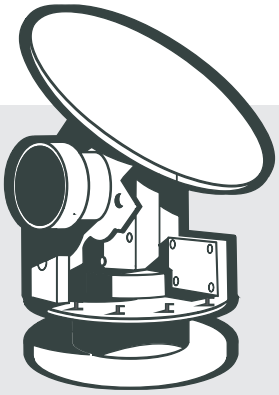


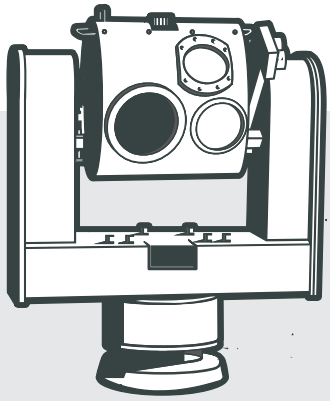


Electric Encoder Explorer & Multi Interface Converter for setup, testing, development and installation, provides direct interfacing to the Electric Encoder™ via USB, RS-232, RS-485, RS-422, SSi and AqB.

Applications







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