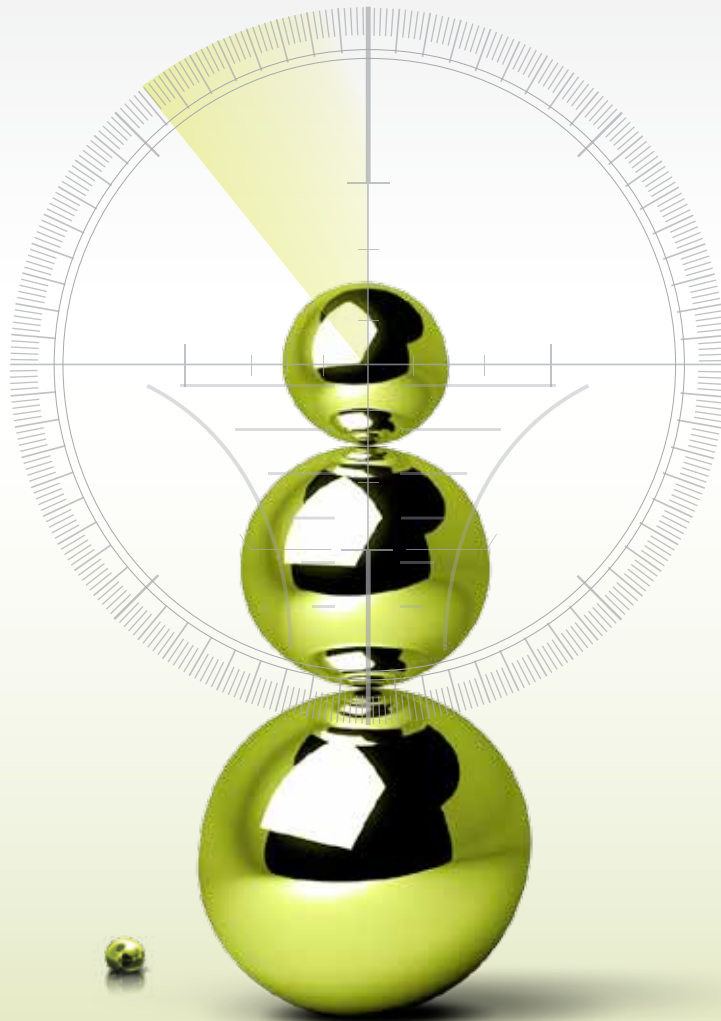


**Netzer**

Precision Motion Sensors Ltd.



Moving Precisely  
With You



Defence



Automotive



Avionic



Medical



Communication



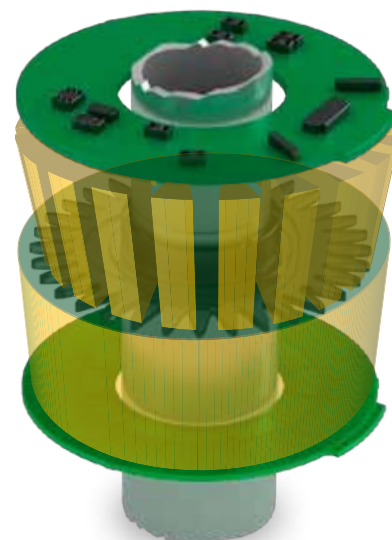
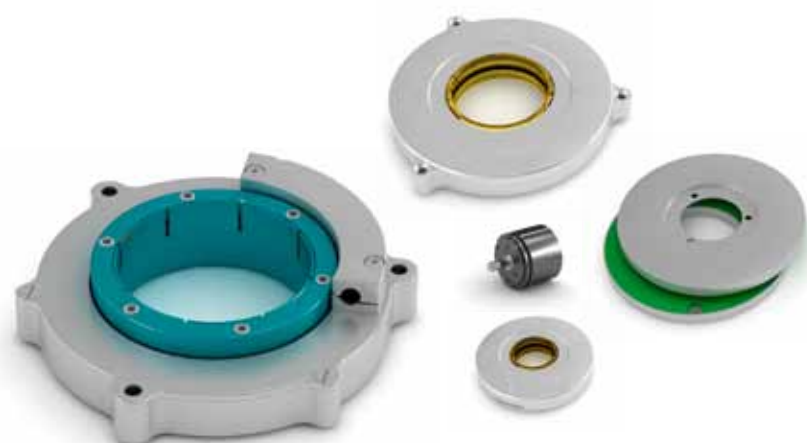
Robotics



Space

## 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 precision 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





Absolute position extreme condition

ROTARY - Polymer / Metal housing



	Contactless floating rotor							
Polymer housing	DS-25	DS-37	DS-58[20]	DS-70		DS-90	DS-130	DS-247
Metal housing	DM-25	DM-37	DM-58[20]	DM-70		DM-90	DM-130	
Functional								
Electrical Cycles/Revolution – Fine Mode	16	16	32	64		64	64	128
Angular resolution (using, 12bit A/D converter)	17 bits	17 bits	18 bits	19 bits		19 bits	19 bits	20 bits
Accuracy	< ±15mdeg°	< ±15mdeg°	< ±10mdeg°	< ±10mdeg°		< ±10mdeg°	< ±10mdeg°	< ±6mdeg°
Maximum usable speed	3,000 rpm		1,500 rpm	750 rpm				
Measurement range	Full rotation - 360°							
Feedback	absolute position - analog Sine/Cosine 1Vp-p, digital - SSI Digital - incremental AqB+Index				absolute position - analog Sine/Cosine 1Vp-p , digital - SSI Digital - incremental AqB+Index			
Mechanical								
Mounting eccentricity - operational	±0.2 mm		±0.3 mm		±0.3 mm		±0.2 mm	
Rotor axial motion - operational	±0.2 mm		±0.3 mm		±0.3 mm		±0.1 mm	
Rotor inertia (gr*mm²)	11	76	800	5200		5200	2400	
Total weight	4 gr	10 gr	36 gr	50 gr		50 gr	65 gr	665 gr
Outer diameter / Inner diameter / Profile (mm)	25 / 6 / 7	37 / 10 / 8	58 / 20 / 10	70 / 30 / 10		90 / 50 / 10	130 / 90 / 10	247 / 170 / 10
Construction material (stator / rotor)	Ultem or Aluminum / Ultem™							Aluminum
Protection	IP40							

Electrical - General	
Supply voltage	+4.6 to +5.5 v
Supply current	< 10 mA
Maximum load current.	analog - 10 mA , digital - 160mA
Output resistance	< 1 Ω

Environment - extreme conditions	
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

Available output formats - General	
	Type
Digital	Incremental - AqB + index
	Absolute position – SSi
Analog	Sine/Cosine (electrical angle)



Absolute position extreme condition

ROTARY - Metal housing

	ROTARY		
	Metal sealed housing	Metal with shaft clamp	2 plates Metal case

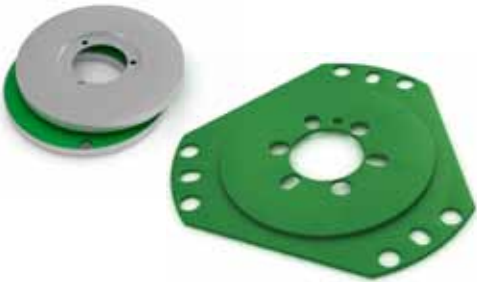


	Digital - absolute position					
	DL-25	DL-60	DK-90	DK-160	DF-60	DF-90
Functional						
Electrical Cycles/Revolution Fine Mode	16	32	32	32	32	32
Angular resolution	17 bits	18 bits	19 bits		18bits	18 bits
Accuracy	< ±15mdeg°	< ±10mdeg°	< ±10mdeg°		< ±20mdeg°	< ±15mdeg°
Maximum usable speed	3,000 rpm	1,500 rpm	1,500 rpm		1,500 rpm	1,500 rpm
Measurement range	full rotation - 360° singel turn		full rotation - 360° singel turn		full rotation - 360° single turn	
Feedback	absolute position - digital ssi		absolute position - digital ssi		absolute position - digital ssi	
Mechanical						
Total weight	40 gr	60 gr	120 gr	240 gr	60 gr	120 gr
Outer diameter	25	60	90	160	60	90
Construction stator material	Aluminum					
Protection	IP65		IP40		IP40	

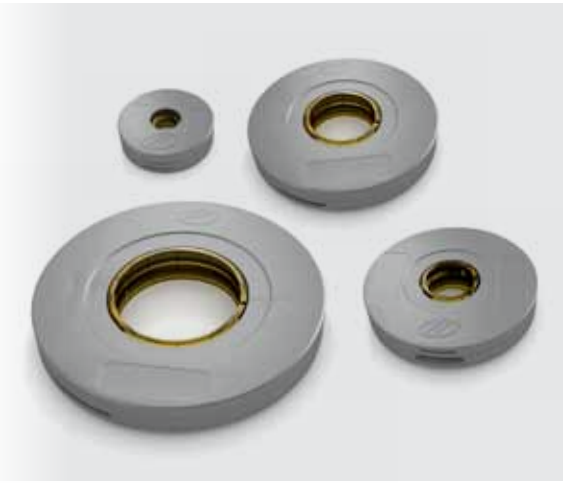
CUSTOM - VLP - 2 plates

Electrical Rotary Encoders

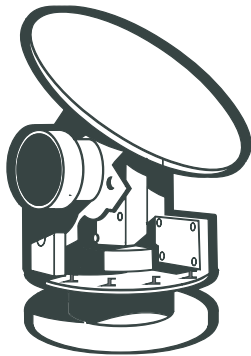
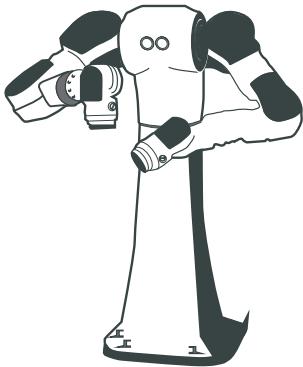
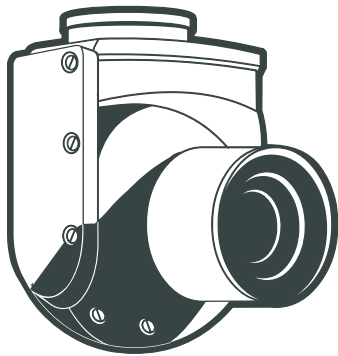
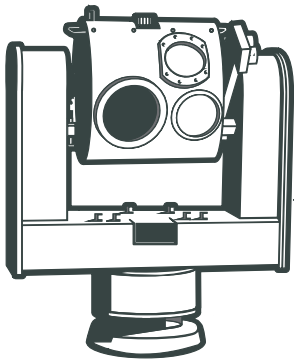
The Netzer Electric Encoder™ flexibility lends itself to easy customization offering unmatched design freedom, performance, and cost effectiveness. The Netzer Electric Encoder can be customized in terms of mechanical dimensions, resolution, accuracy, packaging, power consumption, and adaptation to various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



Absolute position industrial automation



Contactless floating rotor						
Polymer housing	DR-25	DR-37	DR-58	DR-70	DR-90	DR-130
Functional						
Angular resolution	14 bit					
Accuracy	< ±35mdeg°		< ±25mdeg°			
Maximum usable speed	3,000 RPM					
Measurement range	Full rotation - 360°					
Feedback	Absolute position - digital - SSI / Digital -incremental					
Environment conditions	-20 + 65 Deg C					





**Netzer**

Precision Motion Sensors Ltd.

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