



SENSOR-GRADE MAGNETS FOR POSITION SENSING APPLICATIONS



The Original Architects of Magnetic Technology



Dexter Magnetic Technologies is the global leader in the specification, design and fabrication of magnetic products and assemblies. Since its founding in 1951, we continue to evolve with market needs - as the first to offer custom shapes and develop patented magnetic designs. Solutions from Dexter have and continue to positively impact our world daily – from life-saving medical devices to intelligent optics.

As the essential magnetic system partner, our company offers highly experienced engineers and manufacturing staff dedicated to developing innovative technological solutions and services through a powerful combination of partnerships and magnetic expertise. We take pride in the long-term success of customers and markets. To partner with Dexter is to team with a world leader in magnetics and magnetic design.

AT THE FOREFRONT OF MAGNETICS

Delivering quality magnetic services and products to market, Dexter knows what drives customers and their industries. Our broad range of off-the-shelf and custom magnetic solutions include:

- Permanent magnets
- Magnetic assemblies
- Magnets for sensors
- Biomagnetic separators
- Magnetic cores and accessories

INVESTING IN A STRONG FUTURE

Confidence in your solution starts with Dexter's commitment to best-in-class resources for your design, such as:

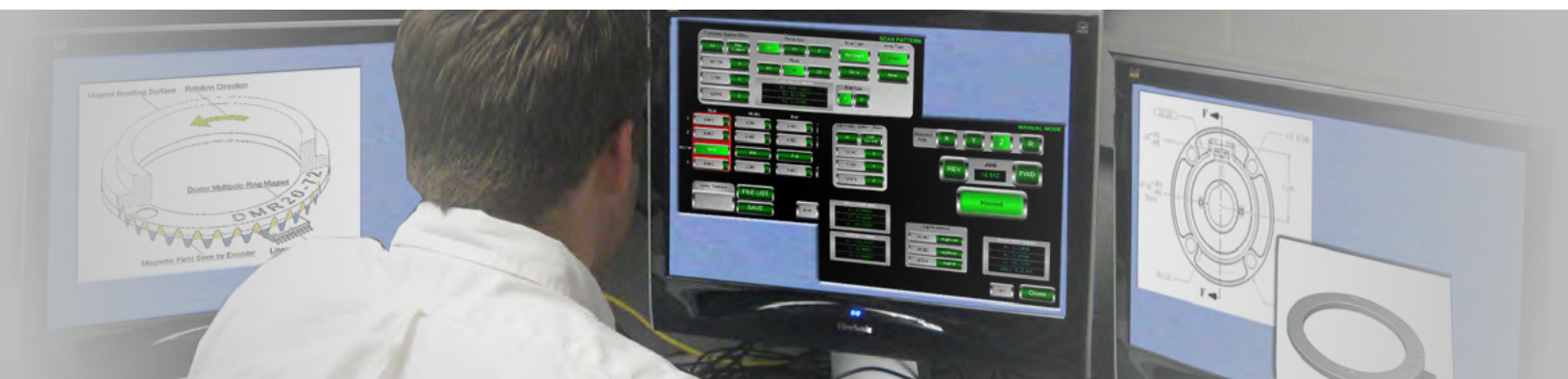
- Fully licensed magnetic materials
- ISO 9001:2008 and AS9100 certified facilities
- Clean room (ISO7) assembly
- ITAR and DFARS compliance
- PPAP documentation
- Environmental testing
- Standard and custom packaging
- Standard and special coatings
- Serialization
- Encapsulation options for medical or extreme environmental conditions

EXPERTISE ON WHICH YOU CAN COUNT

From aerospace to energy, Dexter's engineering and support teams have the market experience to understand needs for a wide range of magnetic applications.

Engineers and service representatives are ready to assist in applying sensor-grade magnets for use in:

- Relays and switches
- Fluid flow meters
- Gauges
- Joystick devices
- Robotics
- Safety switches
- Optics
- Reed switch activation



COLLABORATION WITH LEADING IC MANUFACTURERS

Dexter proudly partners with leading IC manufacturers and their networks to ensure customers have the magnet they want - when they need it.

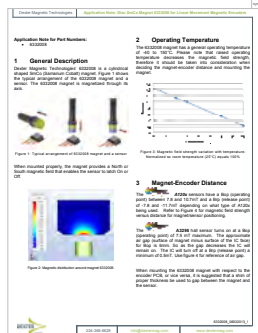
Our teams have created easy-to-use cross reference charts for IC / magnet compatibility reference. Charts, as well as part-specific application notes and datasheets, can be downloaded from our website.

As with any application, it is recommended to contact Dexter engineering and support to discuss your exact magnet requirements.



Datasheets detailing:

- Material characteristics
- Dimensions
- Compatible encoders
- Application examples



Application Notes detailing:

- Magnet-Encoder distance
- Operating temperature
- Lateral displacement
- Tilting angle
- Dimensions & tolerances
- Alignment tolerances



- Paired Solutions: standard magnets matched with specific IC manufacturer part numbers. (see Compatibility Matrices online)
- Application notes for Paired Solutions
- Traceability & quality documentation
- Standard and custom packaging
- Engineering Services: custom magnet designs
- Engineering Services: tolerance studies
- Accuracy classes for critical applications
- Cloning features for orientation alignment
- Custom marking
- Special testing and certification

Dexter Magnetic Technologies has been developing magnetic solutions for the sensor / encoder market for more than three decades.

The company's legacy of engineering expertise and customer awareness has created industry-leading reliable and robust magnetic solutions for sensor / encoder technology. With a full portfolio of magnet possibilities - from standard to custom designs - your hall effect and reed switch applications are supported.

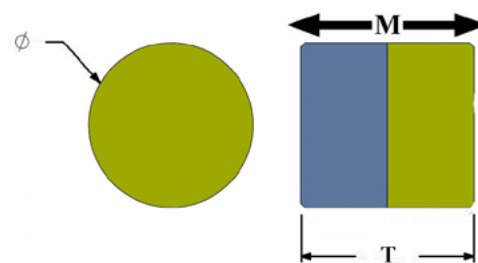
Standard and custom designs are available for the axially and diametrically magnetized disc magnets as well as our revolutionary line of multipole strip and ring magnets. Our teams provide front-end application support and project guidance throughout your program's life cycle.

Axial Disc Magnets for Magnetic Encoders

The axial disc magnets from Dexter come in standard sizes and technical specifications. As with any product from Dexter, we guarantee superior performance.

Use the below technical chart to find the magnet for your requirements. If you know your IC manufacturer, use our online Sensor / Magnet Compatibility Matrices.

If you are looking for a custom design, our team of engineers utilize advanced modeling capabilities to determine the ideal magnet for your application.



Part Numbers:	2910042-1	2910043-1	2910044-1	2910045-1
Physical Data				
Diameter (ø)	2.0 +/- 0.1mm	4.0 +/- 0.1mm	6.0 +/- 0.1mm	8.0 +/- 0.1mm
Thickness (T)	0.8 +/- 0.05mm	2.5 +/- 0.05mm	2.5 +/- 0.05mm	2.5 +/- 0.05mm
Density	7.6 g / cc	7.6 gram/cc	7.6 gram/cc	7.6 gram/cc
Mass	≈0.02 g	~0.24 gram	~0.53 gram	~0.96 gram
Linear Coefficient of Thermal Expansion (CTE)	5.0 to 8.0x10 ⁻⁶ °C ⁻¹	5.0 to 8.0x10 ⁻⁶ °C ⁻¹	5.0 to 8.0x10 ⁻⁶ °C ⁻¹	5.0 to 8.0x10 ⁻⁶ °C ⁻¹

Magnetic Characteristics

Material	Neodymium	Neodymium	Neodymium	Neodymium
Energy Grade	35 MGOe	35 MGOe	35 MGOe	35 MGOe
Temp Coefficient of Magnetic Field Strength	-0.15% °C ⁻¹	-0.15% °C ⁻¹	-0.15% °C ⁻¹	-0.15% °C ⁻¹
Max. Operating Temp.	120°C	120°C	120°C	120°C
Coating	Nickel Plating	Nickel Plating	Nickel Plating	Nickel Plating

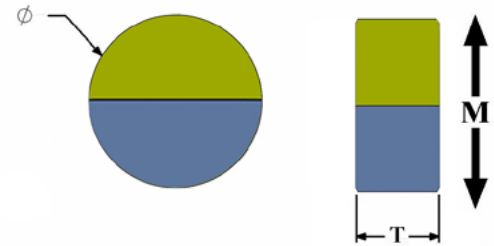


Diametric Disc Magnets for Magnetic Encoders

The axial disc magnets from Dexter come in standard sizes and technical specifications. As with any product from Dexter, we guarantee superior performance.

Use the below technical chart to find the magnet for your requirements. If you know your IC manufacturer, use our online Sensor / Magnet Compatibility Matrices.

If you are looking for a custom design, our team of engineers utilize advanced modeling capabilities to determine the ideal magnet for your application.



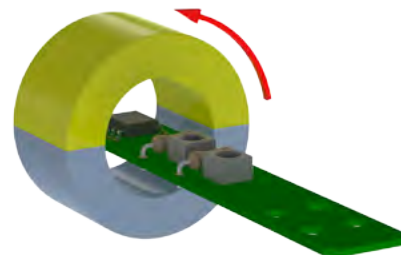
Part Numbers:	2910041-1	2410022-1	2410025-1
Physical Data			
Diameter (Ø)	6.0 +/- 0.1mm	6.0 +/- 0.1mm	6.0 +/- 0.1mm
Thickness (T)	2.5 +/- 0.05mm	3.0 +/- 0.05mm	3.0 +/- 0.05mm
Density	7.6 gram/cc	7.6 gram/cc	8.2 gram/cc
Mass	~ 0.53 gram	~ 0.64 gram	~ 0.70 gram
Linear Coefficient of Thermal Expansion (CTE)	5.0 to 8.0x10 ⁻⁶ °C ⁻¹	5.0 to 8.0x10 ⁻⁶ °C ⁻¹	5.0 to 8.0x10 ⁻⁶ °C ⁻¹

Magnetic Characteristics

Material	Neodymium	Neodymium	Samarium Cobalt
Energy Grade	35 MGOe	35 MGOe	32 MGOe
Temp Coefficient of Magnetic Field Strength	-0.15% °C ⁻¹	-0.15% °C ⁻¹	-0.03% °C ⁻¹
Max. Operating Temp.	120°C	120°C	120°C
Coating	Nickel Plating	Nickel Plating	Not Required



Also available in a ring configuration:



Multipole Magnets for Magnetic Encoders

Dexter's multipole magnet family of products are available in standard and custom lengths. With standardized pole pitches, Dexter's multipole magnet products work with AMS & IC-Haus encoders IC's.

The multipole strip magnet is an off-the-shelf solution. Technical details as well as ordering information can be found on the following page.

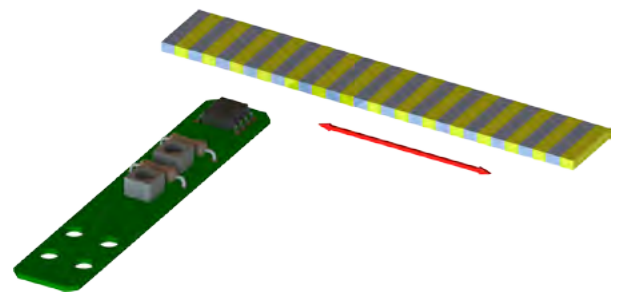
Multipole ring magnets are available as standard and custom solutions. Further information on this offering is available through our sales team. Please contact us to discuss your application requirements.

Help Me Design: Multipole Ring Magnets

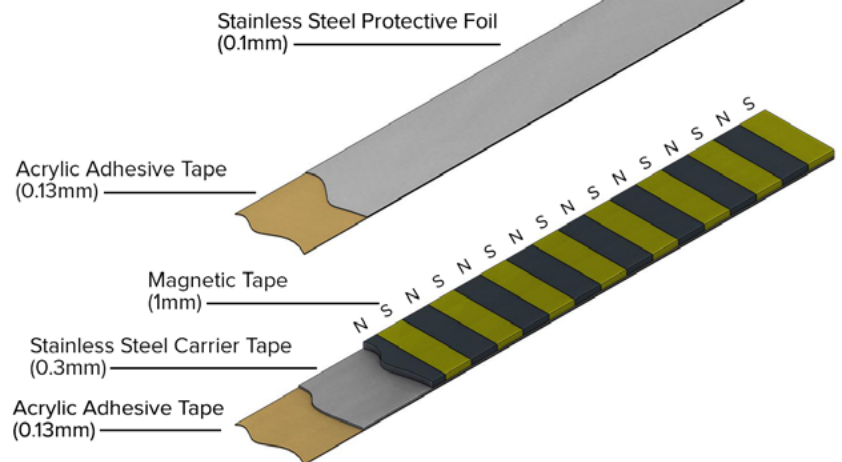


Below are key questions our team will discuss with you in selecting your multipole ring magnet.

- What IC are you using?
- What is the number of counts per revolution needed?
- What resolution are you trying to achieve?
- What is the desired angular accuracy?
- What is the operating air gap? (recommended: 1/2 of pole length)
- What is the operating temperature range?



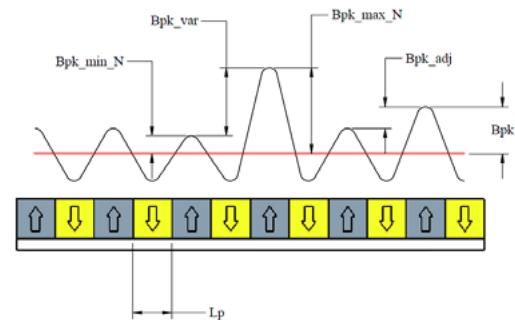
Dexter Multipole Strip Magnet



Multipole Strip Magnets

Standard options are 100mm / 300mm lengths with stainless steel backing and adhesive.

Custom options include user defined lengths, non-adhesive backing and a stainless wearstrip. These options are available upon request.



Material		Rubber Bonded SrFe
Flux Density @ 0.5mm GAP	Bpk	20 mT to 60 mT
Magnetic Field Temp Drift	TkBr	-0.18 % / °C
Number of Poles		8 poles (minimum)
Pole Length	Lp	1.0, 1.2, 2.0 mm
Pole Length Deviation	Lp_dev	1.2 % * Lp (maximum)
Cumulative Pole Accuracy		10 µm/m , 20 µm/m , 40 µm/m
Amplitude Variation	Bpk_var	10 % Bpk (maximum)
Adjacent Pole Amplitude Variation	Bpk_adj	5% Bpk (maximum)
Thermal Expansion		4.5E-05 mm / mm / °C
Temperature Range	Tamb	-20 °C to 85 °C
Corrosion Resistance		No Rust
Appearance		Cracks Prohibited

To configure a part number, please select your specification from below.

70S XXXXXX XX XX X 2

Strip Length
 000100mm
 000300mm
 *Custom lengths available

Pole Length
 10 (1.0mm)
 12 (1.2mm)
 20 (2.0mm)

Strip Width
 05 (5mm)
 10 (10mm)
 *Custom widths available

Backing & Cover Options
 Stainless Steel with acrylic adhesive tape
 *stainless steel (without adhesive tape) & stainless steel wear film available as custom

Accuracy
 1 (10µm/m)
 2 (20µm/m)
 4 (40µm/m)

Ready to design?
 Request a Multipole Magnet Evaluation Kit.

Kits are available for each pole length (1.0mm, 1.2mm, 2.0mm) and contain three (3) magnets in each pole accuracy (10µm/m, 20µm/m, 40µm/m).

magnetic solutions: realized and optimized

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