



TECHNICAL BROCHURE

Magnetic Couplings

Hermetic non-contact torque transmission for sealed pumps, mixers and industrial systems.



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Technical Data 1

Element	Design choices	Engineering effect
Outer driver	NdFeB / SmCo magnet ring or segmented assembly	Torque density and temperature
Inner driven rotor	Magnet assembly / pole pieces / hub	Torque transfer and inertia
Containment can	316L / Hastelloy / PEEK / ceramic / project-specific	Pressure, chemistry and eddy-current loss
Air gap	Magnet-to-can / can-to-magnet spacing	Torque vs mechanical/pressure margin
Alignment	Radial / axial runout and concentricity	Torque ripple, heat, bearing load
Protection point	Rated vs decoupling torque	Overload behavior and safety margin

Technical Data 2

Application / Architecture	Typical Configuration	Engineering Focus
Chemical / process pump	NdFeB or SmCo inner/outer rotor + containment can	Torque, corrosion, pressure, eddy loss
Mixer / agitator	Radial coupling across sealed vessel wall	Air gap, torque margin, alignment
Vacuum / clean system	Hermetic magnetic drive	Barrier material and zero dynamic shaft seal
High-temperature drive	SmCo coupling	Thermal stability and containment material

Technical Data 3

Parameter	Capability / Options	Notes
Magnet material	NdFeB / SmCo	Temperature / torque / corrosion driven
Containment can	316L, Hastelloy, PEEK, ceramic, project materials	Thickness and conductivity affect torque / eddy loss
Air gap	Minimized but mechanically safe	Gap directly affects torque density
Torque rating	Defined at operating gap / temperature	Include startup / transient margin
Speed	Application-specific	Balance, eddy-current heating and retention reviewed
Pressure / leak	Project-specific	Pressure or leak method must be agreed

Technical Data 4

RFQ / DFM input	What to provide
Torque	Nominal / startup / peak
Speed	Operating / maximum rpm
Temperature	Fluid and ambient / magnet temperature
Containment	Material, thickness, pressure and media
Envelope	OD/ID/length, shaft or hub interface
Validation	Torque test method, leak / pressure, runout, documentation

Technical Data 5

Input	What we need
Rated / peak torque	Nm and duty cycle
Speed	RPM and operating profile
Temperature	Continuous and peak
Fluid / environment	Chemical compatibility, cleanliness, corrosion
Pressure	Normal / design / proof where applicable
Envelope / shafts	Available OD/ID/length and interface drawings

Engineering note

Values are reference specifications unless explicitly stated as guaranteed on a quotation or approved drawing. Final grade, geometry, tolerance, coating, magnetization, operating temperature and validation requirements must be confirmed for the actual application.