

AMCI DuraCoder Reduces Cost, Saves Time & Keeps Railway Grinders on Track.

[Harsco Track Technologies](#) is a chief global supplier of railway track maintenance equipment and services. The company provides track maintenance services to major railroads, short lines, and transit systems, and is a leading source for over 140 types and models of work equipment used in the maintenance, renewal, and new construction of railway track.

The company designs, manufactures and sells five of the world's most successful railway track grinding machines; including the sophisticated RGH-8-C and RGH-10-C (pictured here). These machines remove surface irregularities and restore the profile of the rail to extend track life, reduce wear on rolling stock and track components, and cut fuel consumption.

These [rail track grinders](#) use independently adjustable grinding heads to efficiently grind critical track sections such as switches, turnouts, and road crossings. These grinding heads run along railway tracks and manage their position using rotary encoders.



Harsco Track Technologies RGH10C RAIL GRINDER

The operating environment for these rotary position sensors is extremely heavy-duty and Harsco's engineering team needed a "bullet-proof" solution.

The challenge was unique. Unlike most industrial applications, railway track grinders operate across an incredible range of conditions and temperatures, requiring an equally rugged encoder. For example, Harsco sells & operates rail grinders throughout the U.S., China, Japan, UK, and Germany to name a few places, subjecting the machines to frigid winters, scorching summers and dense humidity.

Harsco Track Technologies discovered [AMCI's DuraCoder™](#) while researching heavy-duty rotary sensors that could output an Analog signal. Although other analog rotary sensors exist, none of them could match the DuraCoder's industrial strength, construction and operational excellence.

All AMCI DuraCoders meet [Ingress Protection 67 \(IP67\) ratings](#), enabling these sensors to reliably perform in applications that would render conventional encoders useless.



AMCI DC25 Analog DuraCoder™ Mounting Location On Harsco RGH10C Rail Grinder

What separates AMCI DuraCoder encoders from competing units is [resolver-based technology](#). Featuring an integrated NEMA 4 housing, the AMCI DuraCoder leverages a brushless resolver sensor, absolute over a single turn. The resolver was originally developed for military applications and has benefited from more than 50 years of continuous use and development.

AMCI recognized the benefits of the resolver and adapted this rotary position sensing technology for the DuraCoder's design.

"Through superior engineering, AMCI has combined the time tested reliability of a resolver with advanced electronics, enabling accurate rotary position feedback in virtually any application. No matter how hot, humid, dusty, oily, or mechanically demanding the environment, the DuraCoder is ready."

-Eugene Radoykov, Chief Engineer
Advanced Micro Controls Inc.



[AMCI DuraCoders](#) are offered in five different types: **SSI, Absolute Analog, Incremental Digital, Absolute Digital, and DeviceNet**. Using integrated circuitry, each DuraCoder type is capable of producing virtually every resolution output configuration required in an automation environment. The 2.5" size DuraCoder is manufactured using a cast aluminum housing and a sealed stainless steel shaft (IP 67 rated).

AMCI DuraCoder™ Rotary Encoder Features:



- **IP67 rating: rugged construction for harsh applications.**
- **Powder coated aluminum housing for superior durability.**
- **Ideal for high-impact applications - withstands mechanical shock & vibration**
- **Stainless steel shafts up to 5/8" diameter.**
- **Industry standard flange or servo mounting.**
- **(5) Different types available:**
 - SSI ○ Absolute Analog ○ Incremental Digital
 - Absolute Digital ○ DeviceNet

Over the last four years, Harsco Track Technologies has purchased hundreds of [Analog DuraCoder encoders](#) for installation on their railway track grinding machines. Harsco's presence within the railway track maintenance industry continues to grow and AMCI is a proud partner in their success. AMCI's deep understanding of control applications, combined with world class engineering, make it easy for customers to specify solutions that save their companies time and money, while improving quality.

For more information on AMCI's DuraCoder Rotary Encoder products, please visit: www.DuraCoder.com

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