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Safe Tundish Drain with Residual Steel Detection (RSD) for Maximized Yield and Process Optimization

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Accurate and reliable measurement of the remaining steel level in the tundish is very important for preventing undetected emptying, optimizing steel grade changes, and maximizing strand length. Conventional weight-based measurement often introduces inaccuracies increasing the risk of slag carryover into the mold, unnecessary downgrading, and reduced process efficiency.

The AMEPA Residual Steel Detection (RSD) system provides a precise and reliable solution for monitoring the residual steel height in the tundish. Utilizing an electromagnetic field-based measurement principle, the RSD system directly detects the steel/slag boundary layer, enabling safe and optimized tundish drainage. Using the tundish weight signal of the load cells is an indirect measurement method, since the steel level has to be calculated based on the assumption of the composition between steel, slag and tundish powder. Therefore the RSD signal is more accurate. This results in higher yield, reduced tundish skull formation, and improved operational efficiency.

Furthermore, RSD technology is particularly beneficial during steel grade change. By safely lowering residual steel levels to a minimum before pouring a new grade, the system significantly reduces mixing zones, reaching final product quality much faster, which leads to way fewer steel downgradings. By safely draining the tundish to the optimal steel level, the system enhances reproducibility and reduces material losses, leading to cost savings and increased profitability.

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