COMANSA, a leading global manufacturer of tower cranes, needed special braking systems for five models in its flat-top crane line that will be used on a special offshore application project. The crane models for the project vary in size with lifting capacities from 6-18 tonnes and a maximum reach of up to 262.5 ft. (80m).

Offshore lifting operations involve unique challenges caused by irregular waves. These “freak” waves can actually lead to higher loads on a crane than expected. The crane operator must be able to activate an emergency release system to avoid these overload situations as well as after an emergency stop or a power failure.

Stromag provided its Manual Overload Protection System (MOPS) to meet the challenging offshore crane requirements. The MOPS was designed specifically for offshore applications and complies with the NF EN 13852 standard. Each MOPS is comprised of an SIME fail-safe, single-spring hydraulic caliper, a hydraulic power pack and an electrical control unit. The brakes are positioned on the low speed side of the crane’s winch drive to provide emergency stopping and holding functionality.

Crane models with 15-18 tonne capacities utilize a robust Model SHD9 brake with a dynamic braking force of 43 to 100 kN. Cranes with 6-10 tonne capacities are equipped with a lightweight Model SHD5A brake with a dynamic braking force of 15 to 56 kN. Both brake models are compact and designed for operation in restricted spaces. All units feature proximity switches with protective covers for opening and lining wear monitoring.

The electrical unit controls each brake’s operation through the hydraulic power pack and indicates all possible faults that could occur on the system, including lining wear, battery defect, etc.