



Product

Wichita Custom HBS42-14 Wet Brake

Application

Horizontal Axis Tidal Turbine

Highlights

- Dual function: emergency stop and parking brake
- Wet-brake technology – torque generated by oil-in-shear
- 1.5 MNm static torque
- Shaft Speed: 6-8 RPM (typical)
- Hydraulic power unit also supplied

Wichita HBS42-14 Wet Brakes are utilized on the world's largest tidal turbines designed for open ocean deployment, one of the harshest environments on the planet. Each turbine stands 75 ft. tall and features a unique twin rotor set (59 ft. diameter) to harness ebb and flow tides while generating 1 MW of power. The turbines are fully submersed and positioned on the seabed.

Wichita engineers developed a custom, spring-applied, hydraulically released brake designed to suit the customer's parameters for 1.5 MNm braking torque, controlled and emergency stop functions, condition monitoring, nacelle mounting, and shaft sealing. A custom hydraulic power pack was also provided with on-board control valves configured to allow variable control of braking duty while operating in the event of complete power blackout. The HBS brakes are mounted directly to the low speed shaft (the turbine's rotors turn at a very slow rate of 6-8 RPM, the optimum speed for the generator).

The braking technology in the HBS42-14 uses oil-in-shear as the torque generator which does not wear or create dust in the same manner a dry friction brake would. The friction coefficient in a wet brake is very stable and has a much lower potential for contamination of the torque generating interfaces.

For this environmentally-sensitive application, Wichita tested and approved the use of a bio-degradable synthetic oil. This was an important issue since marine life will be in close proximity to the turbines.

US (Application Assistance)
1-800-964-3262
wichitaclutch.com

Europe
+44 (0) 1234 350311

Asia Pacific
For a list of our AP sales offices:
altramotion.com/contactus