

E710 VSD for Pump Speed Control and Efficiency | TECO

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Technical Articles

Precise Speed Control From the First Revolution: The New TECO E710 for Pump System Efficiency and Long-Term Reliability

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The TECO E710 Next Gen Compact Current Vector Control Variable Speed Drive delivers precise low-speed torque control, configurable S-curve acceleration profiles, and an internal component wear warning for centrifugal pump, submersible, and booster station applications.

The TECO E710 covers pump applications from 0.75kW to 7.5kW on a 380-480V three-phase supply, and from 0.37kW to 2.2kW on a 200-240V supply. This range supports centrifugal pumps, submersible pumps, and pressure booster applications across the water, wastewater, and industrial process sectors.

In Sensorless Vector mode, the drive delivers 150% rated motor torque at 0.5Hz, maintaining the intended acceleration ramp from the first revolution of the pump shaft. Configurable S-curve profiles smooth each pump start and stop cycle, reducing peak transient pressures on valves, pipework, and pump seals over the life of the installation.

TECO E710 Predictive Diagnosis at Remotely Monitored Pump Stations

Water and wastewater pump stations are increasingly monitored remotely, meaning an unexpected drive failure at an unattended station can go undetected for extended periods

The TECO E710 Predictive Diagnosis function continuously monitors its internal cooling fan and DC bus capacitors from commissioning, generating a maintenance alert via the output relay or Modbus RTU interface as either component approaches end-of-life. This provides a warning while the system is still operating, rather than a fault indication after failure.

Hamish Robertson, TECO Australia and New Zealand Product Manager for Drives and Automation, described the operational difference: "The unplanned pump station outage becomes a scheduled maintenance task."

The alert can be integrated into a plant SCADA system, giving the operations centre advance notice before failure occurs.

Thermal Performance, Integration, and Commissioning

The TECO E710 maintains full rated output to 50°C without power derating, making it well suited to enclosed pump rooms where summer ambients regularly exceed 40°C.

Modbus RTU is built in as standard, with optional expansion cards covering EtherNet/IP, Profibus DP, CANopen, and EtherCAT. The Copy Module (JN5-CU) stores a complete drive parameter set and transfers it to a replacement unit in seconds, reducing recommissioning time on installations running multiple identical drives.

Free DriveLink PC software handles parameter management and real-time monitoring without additional licensing cost. The drive supports seven motor control modes: V/F, V/F+PG, SLV, SV (induction motor), PM SV and PM SLV (permanent magnet), and SynRM (available on request), covering the motor types used across pump applications.

It is housed in an IP20 enclosure, suitable for installation within an IP-rated switchroom panel. For technical specifications on the TECO E710 Next Gen Compact Current Vector Control Drive, contact TECO Australia and New Zealand or your nearest state office.

TECO engineers provide direct application support across Australia and New Zealand. For more information, visit <https://electricmotors.teco.com.au/>

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Specify and select a three phase motor in this order: load and duty, then the drive arrangement, then the site, and only then the efficiency class and the frame. Wrong

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A variable speed drive (VSD) is a power electronic controller that sets the speed of an AC motor by varying the frequency and voltage it supplies, instead of running the

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