

HV Variable Speed Drives (P026)

This package is for the design, supply, delivery and commissioning for the High Voltage Variable Speed Drives for Prominent Hill Mine Site.

This supply includes, but is not necessarily limited to, the following:

1. High Voltage Variable Speed Drives and isolator panels.

- Underground Ventilation Fan VSDs 1600kW 11kV input 6.6kV output - 2 off
- Refrigeration Plant Compressor VSDs 800kW 11kV input 3.3kV output- 6 off (4 Future)

2. The Variable Speed Drive shall include:

- i. The VSD shall be a Perfect Harmony GH180 Generation 5 and have interchangeable parts as far as practical with the Generation 4 units.
- ii. High voltage termination kits for incoming/outgoing cables,
- iii. Preparation of the equipment and documentation for transport to the switchroom Builder.
- iv. Design of Variable Speed Drive with isolator and earth switch combinations.
- v. Arc flash detection in VSD with provision for hardwired inter-trip signal to 11kV feeder.
- vi. Provision of heat loading calculations to aid in switchroom air conditioning sizing.
- vii. The Variable Speed Drive shall allow for control and monitoring via Ethernet/IP communications and hardwired PLC inputs and outputs. A second communications port shall be used to connect to the remote HMI panel located in the LV switchroom. New HMI panel required.
- viii. The VSD system shall be designed to produce no standing waves or overvoltage conditions based on a maximum cable length of 250 metres.
- ix. Special tools including cell lifter and associated equipment and specialised transporting and lifting devices necessary for the site assembly, installation, commissioning, operation, maintenance and overhaul of the supplied equipment.
- x. Castell key interlocking with the Principals 11kV Feeder and the VSD Earth Switch and access doors.
- xi. Provision of VSD drive control/monitoring Keypad and Display Interface suitable for wall mounting inside the LV switchroom including enclosure and software configuration. A total of One (1) Keypad and Display Interface Panels are required. This will be a duplicate of Keypad and Display Interface Panel mounted on the drives. Keypad and Display Interface Panel for Underground Ventilation Fan Drives, enclosure to be supplied.