Sales Specification for ProSpeed-II™ Closed Loop Control System For Eddy Current Brakes

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Features

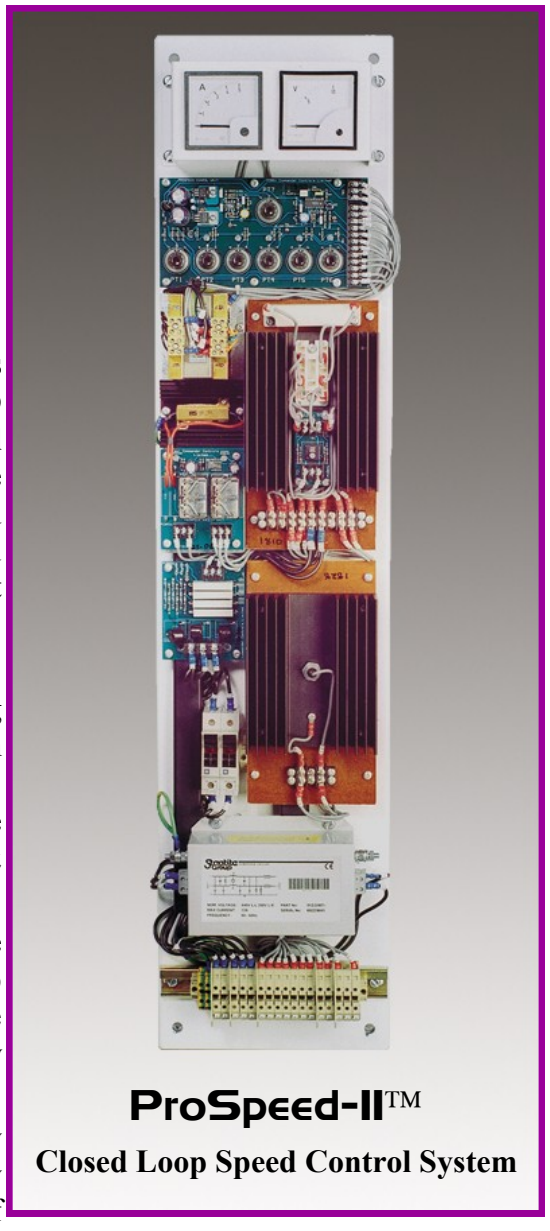
- ♦ Safety - Reliability ♦ High Efficiency
- ♦ Low Maintenance ♦ Field Proven System
- ♦ Nuclear Industry Approved
- ♦ Power Generation Industry Approved
- ♦ RFI Tested by BSI to BS 2011 Part 2
- ♦ EMC Tested & Seismically Qualified by BSI
- ♦ to EN 50081-2: 1993 & EN 50082-2 1995

Commander Controls Limited developed this advanced and highly efficient Closed Loop Control System called **ProSpeed-II™ Closed Loop Speed Control System** for the effective control of Eddy Current Brakes which are used on high integrity overhead travelling cranes and other equipment where accurate and constant speed control and load safety are paramount.

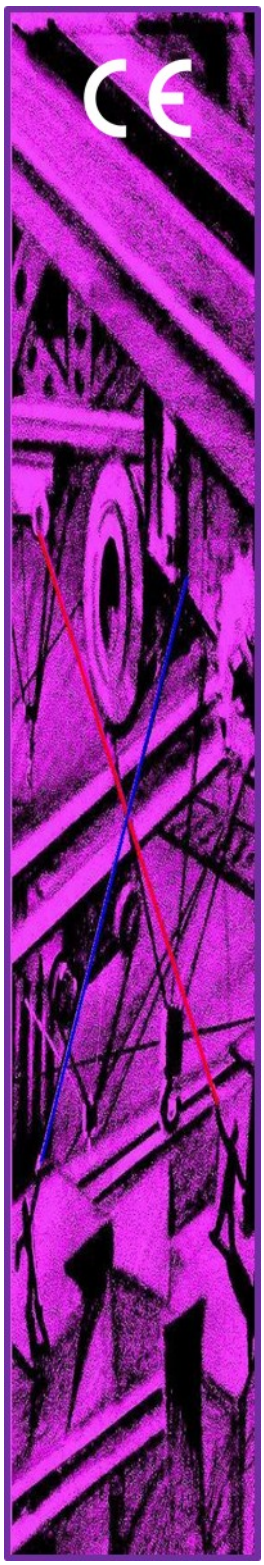
When used in conjunction with the **ComDrive™ Eddy Current Brake**, slip-ring wound rotor type electric motor, contactor switch gear and specially graded resistance, **ProSpeed-II™** provides a reliable failsafe speed control solution for both Crane, Hoist & Winch applications.

ProSpeed-II™ can also be used to replace most other makes of open or closed loop control for eddy current brake systems. The all-steel design chassis plate can be easily adapted for alternative mounting footprints.

ProSpeed-II™ has been environmentally tested and is Seismically qualified and is fully Certified. Complete units are usually off the shelf for world-wide shipment.



ProSpeed-II™
Closed Loop Speed Control System



Typical Applications

High Integrity Steelworks - Heavy Engineering Cranes
Nuclear Fuel Reprocessing Handling Operations
Nuclear Reactor Refuelling (Charge) Cranes
Power Station Turbine Hall Cranes - Heavy Lift Shipbuilding Cranes
Other Electrically Power Machinery or Plant - Vessel Slip-way Winches

Technical Details
ProSpeed-II™ Closed Loop Control System for Eddy Current Brakes

Construction

The **ProSpeed-II™ Closed Loop Speed Control** system is fully self contained and fitted with all necessary controls and instrumentation to set up the required speeds without the need to use external instruments unless a tachometer reading was required as confirmation. Accurate pre-set speed control up to 5 speeds can be achieved in both directions of movement between 7.5% and 60% of the applied motor rated speed. LED indication is provided to indicate which speed step is active (selected). Qty 2, 4 pole safety relays are incorporated to monitor for current and voltage failures and connect into the external protective control system (Main Line Contactor and/or No-volt relay circuit). All components used have been sized for at least 2.5 x safety factor, both on voltage and current thus enabling high in-built reliability as a standard feature. The **ProSpeed-II™** system can be supplied as an integral part of a control scheme or can be housed inside a separate control cubicle.

Operation

The **ProSpeed-II™** system uses the motor slip ring voltage as a speed reference, which is compared to a pre-set locked rotor reference voltage. The resulting differential voltage is then applied to an OP amp firing circuit, which in turn varies the output voltage and current of a single-phase Thyristor stack to control the **ComDrive™** field coil effect. The system employs hard wired logic to ensure a high degree of integrity. The Motor rotor slip -ring voltage is used to accurately monitor the drive motion motor up to 60% of its nominal speed. The maximum output voltage is 360V D.C. and the maximum current is 10 Amps. Ambient temperature range is -5°C to +55°C.

Standard Features

- Ammeter & Voltmeters for system set up.
- High-bright LED indicators for each active speed step selected and Safety Relay
- Dual channel safety relay with continuous monitoring of:-
  - **ProSpeed-II™ Closed Loop Speed Control System** Hardware
  - **ComDrive™ Eddy Current Brake System** inter-connecting cabling
  - **ComDrive™ Eddy Current Brake System** field coils
  - Voltage to **ComDrive™** Unit
  - Current to **ComDrive™** Unit
- Locking, recordable multi-turn pre-set speed potentiometers (see below)
- Fully compliant with EU (EEC) EMC & RFI current standards
- Type Tested for Duty Cycle, Environmental (Temperature Range)
- Vibration Tested (Seismic)
- Off Position braking to assist operational brakes
- **ComDrive™** field current build up prior to operating brake (s) release to prevent hook initially lowering before raising when operating brake (s) released.

Locking & Recordable Speed Setting Potentiometer →

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Publication CCL/**ProSpeed-II™ Closed Loop Speed Control System**: Issue 21-10-2015