

### Features

- Half bridge (Class D Inverter) topology with soft switching pulse technology
- Power monitored control loop
- Fast, variable power output
- Affordable, modular standard design
- Informative front panel display with Manual Mode control
- Extensive status diagnostics
- Low power losses
- High power factor
- Small form factor
- Compatible with Comaintel's Modbus/TCP serial link server
- Compatible with all of Comaintel standard work coils
- Voltage and current limiting features
- Thermal protection on critical components
- Medium frequency operating range of 10-30 kHz
- Load detection to prevent malfunction
- RMS current limit according to specified work coil
- 400 Amps peak repetitive current
- CE compliant when installed in a metallic enclosure

### Applications

- Paper and other web roll calendering
- Roll heating
- Roll edge heaters
- Metallurgy
- Injection / extrusion barrel heaters

### General Description

Comaintel's V0110 Class D induction heating power converter was designed with robustness and efficiency in mind. It offers low power dissipation, high current output and a fast response-variable level power control loop. Although the module typical application is roll heating on paper machine calenders and supercalenders, the unit offers great flexibility that allows it to be used in various applications.

The power module offers numerous protections on over-current and over-temperature operation increasing reliability. It features automatic efficient load sensing and programmable load matching. Upgrades from previous models include RMS current limiting, an all-new front display interface with advanced diagnostics, rapid shutdown line, manual mode operation and an improved thermal design.

The V0110 automatically detects and adjusts its operating parameters based on instantaneous current measurements.

Thanks to an innovative pulsing technique, the unit delivers up to 120 Amps at 30 kHz output without sacrificing efficiency.



The front panel displays important information such as real power output and at-a-glance troubleshooting icons. The buttons are used for initial setup and controlling the power output in manual mode. The V0110 can be controlled via a Modbus/TCP serial link server. This solution allows for up to 256 power modules to be connected on a single, robust, proprietary CAN network which connects to our Modbus/TCP serial link server.

The unit is usually water cooled using indirect cooling via the milled base-plate, although some air cooling options are available upon request.

This unit is CE Compliant when installed in a suitable enclosure. It operates on 200 to 240V 3Φ input and typically delivers up to 8kVA (about 7.2kpW) for typical applications, using Comaintel's line of induction heating work coils. Maximum delivered power and power factor can vary according to the set of conditions set by the application parameters. Please contact Comaintel staff for further information on system integration.

**Electrical Properties**

Specification	Min	Typ	Max	Unit
Line frequency characteristics				
Operating voltage <sup>1</sup> ( ± 10% )	200	208	240	Volts
Line current		18	24	A
Line frequency	50		60	Hz
Power factor <sup>2</sup>		0.9		
Current harmonic distortion <sup>3</sup>		43		%
Voltage harmonic distortion <sup>4</sup>		3.5		%
Overall efficiency <sup>5</sup>		95		%
Absolute maximum input voltage			250	Volts
Absolute minimum input voltage	180			Volts
High frequency characteristics				
RMS current <sup>6</sup>			120	A
Peak repetitive current			400	A
Operating frequency	10	21.5	30	kHz
Workload inductance <sup>6</sup>	14	28	125	μH

**Table 1**

Control characteristics				
Power control loop accuracy		200		Watts
Typical Power control loop reaction speed		1	5	Seconds
Input control refresh rate		0.5		Seconds
Input control resolution		0.4		%
Input signal immunity	-36		+36	Volts

**Table 2**

<sup>1</sup> Uses 3-phase AC inputs - ± 10% - contact Comaintel for alternatives

<sup>2</sup> Typical installation running at full power output

<sup>3</sup> Without CE compliance filters

<sup>4</sup> Typical value. Dependant on global setup

<sup>5</sup> Typical installation running at full power output

<sup>6</sup> Using standard 2 μF Capacitor

**Mechanical and Thermal properties**

Specification		Min	Typ	Max	Unit
Module dimensions	Height	174			millimetres
	Length	286			
	Width	114			
Weight		3.5			kilograms
Ambient temperature operating range		0		40	Celsius
Internal temperature limits <sup>7</sup>	IGBT case temperature			70	Celsius
	Internal air temperature			65	Celsius
Work coil connector	Crown Band type connector, Hot Plug			125	Amperes
	Alignment, Float mount	-2		+2	millimetres
	Mating cycles	1000			Cycles
Work coil operating gap		2.5	3	6 <sup>8</sup>	millimetres
Switching capacitor operating temperature				70	Celsius

**Table 3**

Additional technical information available:

- Status Encoding;
- Serial Link Data;
- Global System Specifications;
- Front Display Interface Flowchart;
- Application Guidelines;
- Connections.

Contact us for additional information at [info@comaintel.com](mailto:info@comaintel.com) or 819-538-6583 (Canada)

<sup>7</sup> Monitored by the control board. See section on global system specs.

<sup>8</sup> Could be more depending on configuration, i.e. power level requirement, duty cycle, material heated, desired temperature

