

Features

- Delivers up to 12 kW
- Voltage and current limiting features
- Half bridge topology
- Thermal protection on critical components
- Compatible with all of Comaintel standard work coils
- Power monitored control loop
- Fast variable power output
- Medium frequency operating range of 10-30 KHz
- No load matching needed – automatic resonant frequency detection
- Designed to function with both Serial Link and PWM control (specify when ordering)
- Load detection to prevent malfunction
- Extensive status diagnostics
- 200 Amps RMS continuous current
- 700 Amps peak repetitive current
- Affordable, modular standard design
- Low power losses
- High power factor
- Front panel display of status, operating conditions and input command
- Self adjusting calibration button for factory preset power output
- Small form factor

Applications

- Roll calendaring
- Roll heating
- Roll edge heaters
- Metallurgy

General Description

Comaintel V0056 half bridge induction heating converter was designed with robustness in mind. It offers low power dissipation, efficient load sensing and matching, fast response-variable level power control loop and high integration level. Although the module typical application is roll heating, the unit offers great flexibility that allows it to be used in various applications.

The power module offers various protections on over-current and over-temperature operation increasing reliability.



V0056-A High power D-Class

The module operates on 208V 3Φ input and typically delivers up to 12kW using Comaintel's line of work coils in continuous operation. The unit is usually water cooled using indirect cooling via the milled base-plate. Please contact Comaintel staff for further information on system integration.

The front panel displays power module status, setpoint status, input command and workload operation. There is also a calibration button that allows an initial setup when the module is powered in a new application. This reduces control loop reaction times and eliminates over-current errors. The V0056 can be controlled via PWM signal or serial link. When controlled by PWM, the module offers a simple, low-cost and older system compatible method of controlling power output. In this mode, the status output is pulse coded. By using Comaintel's serial link solution, the V0056 can be connected to Modbus/TCP compatible devices. Products such as the V0047 Serial Link Server and expansion nodes board allow for single ModBus/TCP connection to multiple V0056 modules.

Electrical Properties

Specification	Min	Typ	Max	Unit
Line frequency characteristics				
Operating voltage ¹ (± 10%)	200	208	230	Volts
Line current		34		A
Line frequency	50		60	Hz
Power factor ²		0.93		
Current harmonic distortion ³		41		%
Voltage harmonic distortion ⁴		3.5		%
Overall efficiency ⁵		95		%
Absolute maximum input voltage			250	Volts
Absolute minimum input voltage	180			Volts
High frequency characteristics				
RMS current			200	A
Peak repetitive current			700	A
Operating frequency	10	21.5	30	kHz
Workload inductance ⁶	14	28	125	µH

Table 1

Control characteristics – PWM				
Power control loop accuracy		200		Watts
Power control loop reaction speed		1		Seconds
Input control signal (PWM format) ⁷	15		24	Volts
Input control signal timebase ⁷	1 ⁸	8	20	Seconds
Output status signal supply ⁷	15		24	Volts

Table 2

¹ Uses 3-phase AC inputs ± 10% - contact Comaintel for alternatives

² Typical installation running at full power output

³ Without CE compliance filters

⁴ Typical value. Dependant on global setup

⁵ Typical installation running at full power output

⁶ Using standard 2 µF Capacitor

⁷ Applicable only when using PWM interface

⁸ Lower resolution below 3.2s timebase

Mechanical properties

Specification		Min	Typ	Max	Unit
Module dimensions	Height		204		millimetres
	Length		290		
	Width		295		
Weight			8.72		Kg
Ambient temperature operating range		20		40	Celsius
IGBT ⁹	Max operating temperature			70	Celsius
Work coil connector	Insertion force		133		N
	Retention force		2224		N
	Latch retention force		n/a		N
Work coil operating gap		2.5	3	5 ¹⁰	millimetres
Switching capacitor operating temperature				70	Celsius

Table 3

Additional technical information available:

- Status Encoding;
- Serial Link Data;
- Global System Specifications;
- Application Guidelines;
- Connections.

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

⁹ Monitored by the control board. See section on global system specs.

¹⁰ Could be more depending on configuration, i.e. power level requirement, duty cycle, material heated, desired temperature

