

# Profile

## PRODUCT

### Ultra5000 Intelligent Servo Drives



#### Overview

The Ultra5000 Intelligent Position Drive is an integrated motion controller and digital servo drive in a convenient stand-alone package. Programmed with Ultraware configuration software through a built in ANSI C environment, the C programming language provides an open, universal programming language, advanced mathematics and efficient code execution. The Ultraware software includes libraries of motion control commands to streamline development activities and programming tasks. The Ultra5000 is the perfect fit for stand-alone, cost sensitive single axis applications requiring intelligent motion control functionality and on-board digital and analog I/O.

#### Features

Each intelligent positioning drive features:

- ◆ Integrated drive, controller and I/O packaging eliminates system components, connections and cost
- ◆ Standard DF-1 interface for stand-alone applications, optional DeviceNet communications interface for supervisory control architectures, including the ControlLogix platform
- ◆ Motion programs created in ANSI C for fast, efficient code execution and standard development environment
- ◆ Support for incremental, high-resolution and multi-turn absolute feedback, including Stegmann Hiperface and sine/cosine encoders
- ◆ Automatic motor recognition capability with intelligent feedback devices, eliminating the need to configure motor parameters

#### Power Options

- ◆ 100-230V AC, single phase input
  - 2098-IPD-005: 2.5 Amp Continuous, 7.5 Amp Peak
  - 2098-IPD-010: 5 Amp Continuous, 15 Amp Peak
  - 2098-IPD-020: 10 Amp Continuous, 30 Amp Peak
- ◆ 230V AC, single phase input
  - 2098-IPD-030: 15 Amp Continuous, 30 Amp Peak
- ◆ 230V AC, three-phase input
  - 2098-IPD-075: 35 Amp Continuous, 75 Amp Peak
  - 2098-IPD-150: 65 Amp Continuous, 150 Amp Peak

*DeviceNet option available for all drives. Current specification is 0-peak.*

#### Typical Applications

Applications requiring single axis intelligent motion control in a single, cost effective package will benefit from the use of the Ultra5000. Typical applications include:

- ◆ Packaging
- ◆ Metal Forming
- ◆ Converting
- ◆ Food Processing



**Allen-Bradley**

Catalog Numbers 2098-IPD-xxx-xx



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# Specifications

| GENERAL (2098-IPD-xxx(-DN)* | -050 | -010 | -020 | -030 | -075 | -150 |
|-----------------------------|------|------|------|------|------|------|
| Peak Output Current (Amps)  | 7.5  | 15   | 30   | 30   | 65   | 150  |
| Cont. Output Current (Amps) | 2.5  | 5    | 10   | 15   | 35   | 65   |
| Cont. Output Power (kW)     | 0.5  | 1    | 2    | 3    | 7.5  | 15   |

## INPUT

|                          |                                   |   |                      |    |                         |    |
|--------------------------|-----------------------------------|---|----------------------|----|-------------------------|----|
| Continuous Input Current | 5                                 | 9 | 18                   | 28 | 30                      | 46 |
| Input Voltage            | ← 100-240 volts AC Single-Phase → |   | 230V AC Single Phase |    | ← 230V AC Three Phase → |    |
| Input Frequency          | ←                                 |   | 47-63 Hz             |    | →                       |    |

## USER PROGRAMMING

|                                    |   |
|------------------------------------|---|
| Language                           | Compiled ANSI C with Library of Motion Commands                                       |
| Programming Environment            | Full-featured Color Syntax Editor and "C" Compiler Integrated with Ultraware Software |
| User Program Memory Capacity       | 512 Kbytes  |
| User Program Memory Storage Medium | Flash Memory, 100,000 Write Cycles  |
| Nonvolatile Memory Capacity        | 16 Kbytes (approximately 4000 nonvolatile user variables)                             |
| Nonvolatile Memory Storage Medium  | nvSRAM (high-speed SRAM/EEPROM)   |

## INPUTS/OUTPUTS

|                                 |   |
|---------------------------------|---|
| General-Purpose Digital Inputs  | 16 Optically Isolated 12-24 Volt Inputs                                       |
| General-Purpose Digital Outputs | 7 Optically Isolated 12-24 Volt Outputs - 50 Milliamperes Maximum             |
| General-Purpose Relay Outputs   | 1 Normally Open Relay - 30 Volts DC Maximum Voltage, 1 Ampere Maximum Current |
| General-Purpose I/O Response    | 100 µsec  |
| High-Speed Input Response       | <1 µsec (Inputs 1 and 2)  |
| General-Purpose Analog Inputs   | 2 12-bit Analog-to-Digital Converters (+/- 10v, single-ended)                 |
| General-Purpose Analog Outputs  | 2 12-bit Digital-to-Analog Converters (+/- 10v, +/- 2ma, single-ended)        |

## COMMUNICATIONS

|            |  |
|------------|--|
| Serial     | 2 Independent RS-232/RS-422/RS-485 Ports, 1200-38,400 Baud |
| Networking | DF-1 Point-to-Point Standard, DeviceNet optional           |

## MOTOR FEEDBACK

|                         |  |
|-------------------------|--|
| Input Modes             | Incremental with Index, Sine/Cosine High Resolution Absolute (Single and Multi-turn) |
| Maximum Input Frequency | 2.5 MHz (Encoder Lines), Over 1 Million Counts/Rev (High Resolution)                 |
| Comutation Startup      | Hall Sensor  |

## AUXILIARY FEEDBACK

|                         |                          |
|-------------------------|--------------------------|
| Operation               | Auxiliary Feedback Input |
| Input Modes             | A quad B                 |
| Input Type              | Line Receiver            |
| Maximum Input Frequency | 2.5 MHz (Encoder Lines)  |

## MOTOR FEEDBACK

|                    |  |
|--------------------|--|
| Acceleration Types | Linear, S-Curve                            |
| Motion Types       | Move, Jog, Electronic Gear, Electronic Cam |

\* -DN indicated DeviceNet Option

**For more information refer to our web site: [www.ab.com/motion](http://www.ab.com/motion)**

[www.rockwellautomation.com](http://www.rockwellautomation.com)

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