

# i134 - Digital Servo Drive

Low profile - Narrow shape Digital Servo Drive with builtin IO User Interfaces



## Low profile - Narrow shape Digital Servo Drive

i134 is a high performance high power density servo drive specially designed for brushless motors. It can easily handle 200 W continuous power and 400 W peaks without need of external heatsink. Due to its minimum board size, low profile and narrow shape it is ideal for direct assembly on linear motors.

i134 includes additional shunt output and high power TVS for fast braking capabilities and robustness. i134 is equipped with various general purpose I/O, configuration switches, non volatile memory for on-board programming and a serial communication ports.

Supply voltage	12 V <sub>DC</sub> - 40 V <sub>DC</sub>
Power	200 W continuous; 400 W peak (1 s)
Motor phase continuous current	5 A <sub>RMS</sub>
Supported motor types	DC brush, brushless trapezoidal, brushless sinusoidal, linear brushless sinusoidal
Shunt regulator	Configurable level and duty cycle for regen. braking
Ambient temperature	<ul style="list-style-type: none"><li>• 0 °C to 50 °C (operating)</li><li>• -10 °C to 70 °C (storage)</li></ul>
Humidity	5% - 85% (non-condensing)



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## Advanced control

i134 uses PID algorithms with advanced control capabilities to regulate position, velocity and current/torque. It also includes internal digital filters to improve smoothness of motor movements. The instantaneous demand of the variables is internally computed by a trajectory generator which generates an optimal profile allowing for smooth movements.

Current / Torque Servo Loop	<ul style="list-style-type: none"><li>• PI with output bias</li><li>• Sampling rate of 10 kHz</li></ul>
Velocity Servo Loop	<ul style="list-style-type: none"><li>• PID with integration limit, anti-windup and acceleration feed-forward</li><li>• Sampling rate of 1 kHz</li></ul>
Position Servo Loop	<ul style="list-style-type: none"><li>• PID with integration limit, anti-windup, velocity and acceleration feed-forward</li><li>• Sampling rate of 1 kHz</li></ul>
Operating Modes	Open Loop, Profiled Torque, Profiled Velocity, Profiled Position, Interpolated Position and Homing

## Communications

i134 includes RS232 interface for configuration of applications with low communications traffic volume.

i134 also includes a serial UART port for integration with external Wireless boards.

RS-232	Up to 115200 bps with daisy-chain option
UART interface	3.3 V digital level. For communication with wireless modules such as Bluetooth. Power supply integrated in the connector.

## Command sources

i134 can work in stand-alone mode executing a pre-stored program from its non-volatile memory. It can also be commanded using RS232 network and UART interface.

Network	Using RS232 or UART communication interface
Standalone	Up to 64 macros of 64 commands (1024 Kb of program memory)

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## Feedbacks

i134 works with analog halls as feedback element.

Analog hall sensor (linear hall)	5 V level. Configurable independent gain and offset
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## Inputs & Outputs

i134 servo drive is provided with various general purpose inputs and outputs.

6x general purpose digital inputs	24 V level (PLC)
1x push-button input	24 V level with screw terminal block
2x general purpose outputs	5 V to 24 V level (PLC)
4x configuration DIP switches	3x 2 position DIP switch 1x 4 position DIP switch

## Protections & Compliance

i134 has been manufactured to fully comply RoHS directive and CE marking and incorporates a set of protective features to assure its reliability.

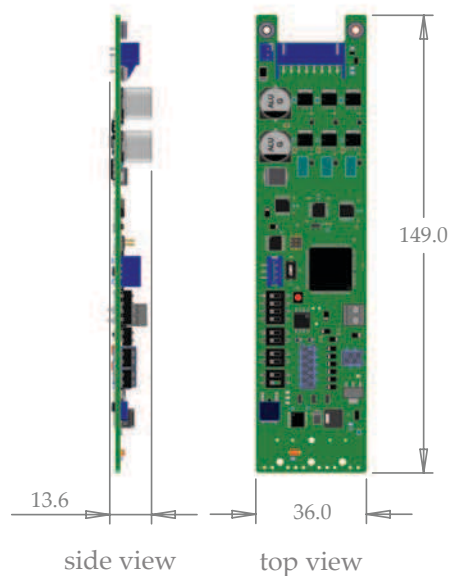
Power supply reverse voltage protection
User configurable over/under temp. and voltage disconnection
Line-to-line, line-to-power short-circuit detection
User configurable overcurrent and $i^2t$ protection
External shunt resistor to absorb motor regenerative braking
ESD protection

RoHS	2002/95/EC
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## Mechanical

i134 is provided without housing and therefore the user can customize the product according to its requirements.

Dimensions	149 mm x 36 mm x 20 mm
Weight	112 g (without housing)
Mounting	2 x M3 screws



## Software

i134 comes with a complete suite of user-friendly and intuitive software tools that helps user to configure, operate and program the controller.

MotionLab	Graphical user interface for configuring and tuning
Composer	Integrated development environment for developing and debugging
Firmware Loader	Software tool which greatly simplifies firmware upgrades



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