



1 kW in business card format

The new MINI-IQ-Drives from WITTENSTEIN electronics GmbH

The new "MINI-IQ-Drives" electronic servo amplifier series from WITTENSTEIN provides up to 1 kW of power while occupying a surface area of only 50x80 mm² – no bigger than a standard business card! The extremely compact and robust controller is powered from an input of 12 to 60 V DC and supplies phase current output of up to 21 A. The miniaturised drive controller is suitable for use in extreme ambient temperature environments from -40 to +85°C. It is thus well suited for distributed automation solutions that require a fast and precise response to application-oriented events.

The drive electronics are available with a CAN bus interface. This interface supports the CANopen standard communication profile DS301 and the device profile DS402. Two analogue and two digital inputs are additionally available as well as two digital outputs. The connection to the outside world takes place over an optional connector board. Without the connector board, the automatic controller can also be custom integrated directly into an electronic motherboard of the customer's own design.

Aided by an efficient signal processor, the automatic controller with its scanning rate of 32 kHz supports the following modes of operation:

- Position control
- Speed control
- Torque control

The drive can provide speed and torque controlled operation either with a motor feedback encoder or without one (i.e. "sensorless").

The assembly-friendly output stage modules of surface mount design save time and costs in the production process with high product quality and reliability. The product line combines an outstanding price/performance ratio with extremely high quality and offers a broad application scope for drive solutions in the food processing, handling, packaging, printing, paper, plastics, semiconductor and textile industries.

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High-tech products made by **WITTENSTEIN** fly into space and win Formula One races. Intelligent drive systems – from the world's smallest high-performance servo drive to the latest state of the art in medical technology – are developed, produced and marketed by a team of around 1.300 employees. With a blend of dedication and enthusiasm, we set benchmarks – every day – worldwide.



„MINI-IQ-Drives“ – the new servo amplifier series

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Both the hardware and firmware can additionally be adapted to customer-specific requirements. In this case, the controller is precisely and flexibly tailored from WITTENSTEIN's modular function blocks to fulfil each customer's application needs. This made-to-measure philosophy results in a unique concept that gives the customer a high degree of freedom when it comes to organising and sizing the drive system, up to and including the housing form and design.

MINI-IQ-Drives can be used to drive precision AC servo actuators made by WITTENSTEIN cyber motor directly. These miniaturised drive systems offer the highest power density, dynamics and precision available in the brushless servo motor industry today. The components have been validated together and are already operating successfully in a variety of demanding applications.

Output power

Model	100 VA	300 VA	500 VA
			
Power Supply	12...60V DC	12...60V DC	12...60V DC
Nominal Current	1,4A @ 60V	4A @ 60V	7A @ 60V
I_{cont} (RMS)	2,1A @ 12V	6A @ 12V	10,5A @ 12V
Peak Current	2,8A @ 60V	8A @ 60V	14A @ 60V
I_{peak} (RMS)	4,2A @ 12V	12A @ 12V	21A @ 12V
PWM frequency	16 kHz	16 kHz	16 kHz

Technical specifications

- Power supply 12 to 60 V DC
- Nominal continuous current up to 10 A rms
- Sine wave commutation for quiet operation and maximum power density
- Operating modes:
 - Speed control
 - Torque control
 - Position control
 - Sensorless control (EMF based)
- Fieldbus: CANopen protocol with device profile (DS402) and communication profile (DS301)
- PC interface: USB 2.0
- Extended temperature range (-40 to +85 °C)
- 16 kHz PWM frequency
- 32 kHz controller frequency

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Photos:

- 1.) The new MINI-IQ-Drives from WITTENSTEIN electronics GmbH
- 2.) 2 x 1 kW in business card format
- 3.) PCB of a MINI-IQ-Drive
- 4.) Components of a MINI-IQ-Drive

Texts and photographs in printable quality can be downloaded from www.presse.wittenstein.de or www.press.wittenstein.de

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WITTENSTEIN electronics GmbH

The core competencies of WITTENSTEIN electronics GmbH lie in consulting for – and the development, production and marketing of – innovative, customised electronic and software components for drive technologies. Drive tasks for a variety of industries and applications are efficiently implemented with the help of a modular building block system. From individually tailored system solutions to practice-proven standard products, these miniaturised, intelligent software and electronic drive components are additionally designed to work in extreme environments, for example at very high or low temperatures, at the bottom of the sea or up in space, where they are renowned for their outstanding level of reliability. WITTENSTEIN electronics' customer base includes numerous companies in the high-tech sectors of the economy, such as aerospace, automotive construction, industrial systems and medical technology.

WITTENSTEIN electronics is one of seven Business Units of WITTENSTEIN AG. Products built by this Igersheim-based high-tech company are employed wherever systems and parts have to be driven and controlled with utmost precision. High-precision planetary gearheads, complete electromechanical drive systems and AC servo systems and motors, to name but a few, are developed, produced and marketed by around 1300 employees in every corner of the globe.

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