

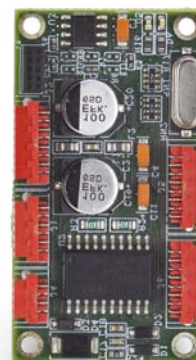


i102-01

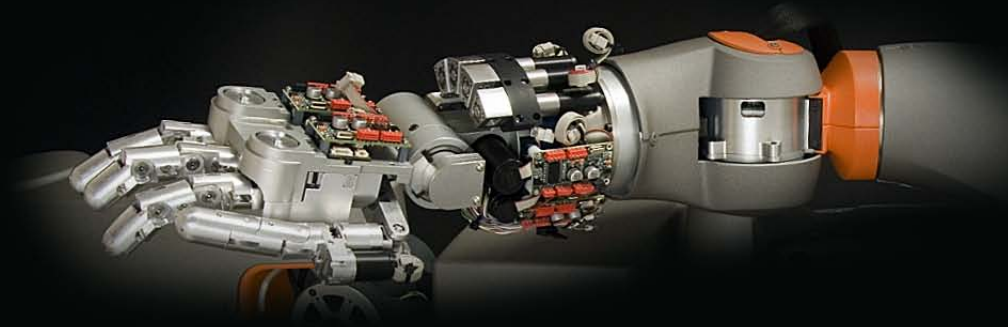
DUAL AXIS SERVO DRIVE

The i102-01 is a tiny DC Servo Drive to control the fingers movement of a humanoid hand. The unit can control 2 brush DC motors at a time via CANopen or SPI interface.

- ✓ Brush motors
- ✓ CANopen interface
- ✓ SPI interface
- ✓ Dual axis control



i102-01 Custom Servo Drive	Units	i102-01
Supply Voltage	V _{DC}	24
Maximum Phase Peak Current (2 s)	A _{RMS}	2 (per axis)
Maximum Phase Continuous Current	A _{RMS}	1 (per axis)
Standby Power Consumption	W	1
Efficiency	%	>95
Supported Motor Types		Dual Brush DC
Commutation		-
Minimum Motor Inductance	μH	500
Power Stage PWM Frequency	kHz	20
Current Sensing		2Ø Low Side Sensing
Current Sensing Accuracy	%	± 1
Current Sensing Resolution	bit	10
Commutation Sensors (Brushless Motors)		-
Supported Feedback		Digital Encoder, Tachometer, Analog Sensor (force measurement)
Torque Loop Update Rate	kHz	10
Position and Velocity Update Rate	kHz	1
Motion Modes		Cyclic Sync and Profilers (Position, Velocity, Torque)
Supported Command Sources		SPI, CANopen
Digital Inputs		(2x) TTL Level - PLC Tolerant
Analog Inputs		(2x) Differential 0-10 V (12 bit)
Digital Outputs		(2x) 5 V Open Drain 1 A
User Configurable Protections		Bus Overvoltage and Undervoltage, Over and Under Temperature, Over Current, Overload (I ² T), Motor Temperature
Hardware Protections		Inverse Polarity Supply Protection, High Power Transient Voltage Suppressor for Short Braking
Software Protections		Mechanical Limits for Homing Modes, Hall Sequence/Combination Error
SPI		Yes
RS-232		No
RS-485		No
CANopen		Yes (DS-301, DS-303, DS-305, DS-306 and DS-402)
EtherCAT		No
Ambient Air Temperature (operating)	°C	-10 to 85 (over 50 with derating)
Ambient Air Temperature (storage)	°C	-20 to 100
Maximum Humidity (non-condensing)	%	5 to 85
Dimensions	mm (in)	52 x 23 (2.04 x 0.90)



NEW SENSITIVE GRIPPER HANDS FOR ROBOTICS

The human hand is one of the most universal and complex tools of nature. It's no wonder researchers are eager to apply the advantages of this evolutionary design to a new generation of robotic hands.

Nowadays, thanks to the latest advancements in micro and precise drive technology together with high-performance bus technology, new sensitive gripper hands can be developed with small footprint, light weight and including several degrees of freedom.

The motors in these applications are typically fitted directly into the fingers and every finger joint includes angle and torque sensors which must resolve very highly. Rapid feedback for comparing target and actual value is crucial for the function of the servo drive particularly in precise and delicate applications.

ANGLE AND FORCE CONTROL

- ✓ Custom algorithms onboard
- ✓ Control based on measured force
- ✓ High resolution encoders
- ✓ Fast control loops
- ✓ CANopen, SPI

CUSTOM SERVO DRIVES HOW IT WORKS

YOUR CUSTOM SERVO DRIVE WITH NO RESTRICTIONS

Struggling with a particular need using standard products? A servo drive that suits your exact demands is all you need though it is not easy to get. Regardless of your requirements, making your own custom servo drive controller has never been so easy. Ingenia uses a modular design approach based on pre-tested circuits to reduce development time and guarantee an outstanding quality.

YOUR BENEFITS

No matter the quantity or features needed, at Ingenia we will help you to find the right solution for your application.

- ✓ Reduced time to market
- ✓ Lower the system cost
- ✓ Optimize your machine
- ✓ Manufacturing outputs delivered