

DINIO7

The **DINIO7** is a DIN Rail mount adapter that allows the Animatics SmartMotor™ to easily interface with popular Input/Output blocks like those produced by Gordos, Grayhill, OPTO-22™ and other manufacturers.

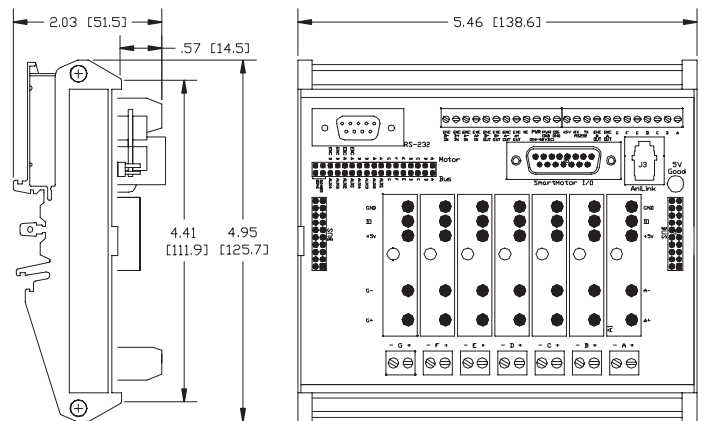
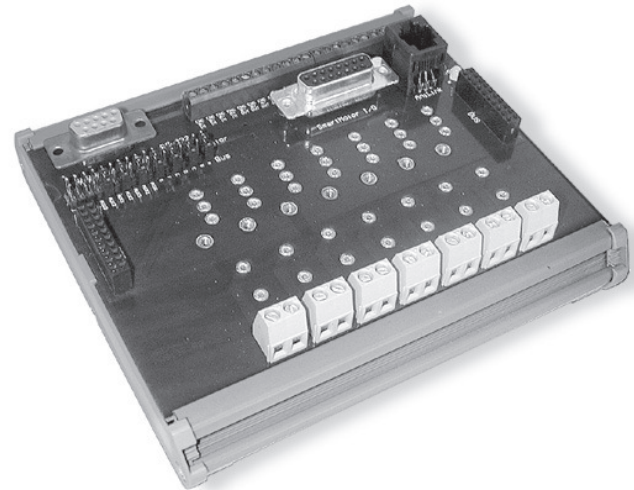
The DINIO7 has slots for seven industry standard OPTO Modules and can be used with either input or output modules.

The DINIO7 has a 9 pin connector for direct connection to a personal computer serial RS232 communications port and an AniLink™ network connector. It is also equipped with an expansion bus to allow it to interface with other Animatics DIN rail mount adapters. Wiring Input/Output up to your Animatics SmartMotor™ is made simple with the DINIO7 breakout board.

* Please consult with appropriate manufacturer for details

Cross Reference To Compatible Opto Modules

Mfg.*	DC Input	DC Output	AC Input	AC Output
Opto-22	G4-IDC5	G4-ODC5	G4-IAC5	G4-OAC5A
Grayhill	70G-IDC5	70G-ODC5A	70G-IAC5A	70G-OAC5A
Crydom	X4IDC5	X4ODC5	X4IAC5	X4OAC5
Gordos/ Crouzet	C4-IDC5	C4-ODC5	C4-IAC5	C4-OAC5
	(3-32VDC high side)		(120VAC high side)	



* All sizes are given in inches, sizes in brackets are in mm

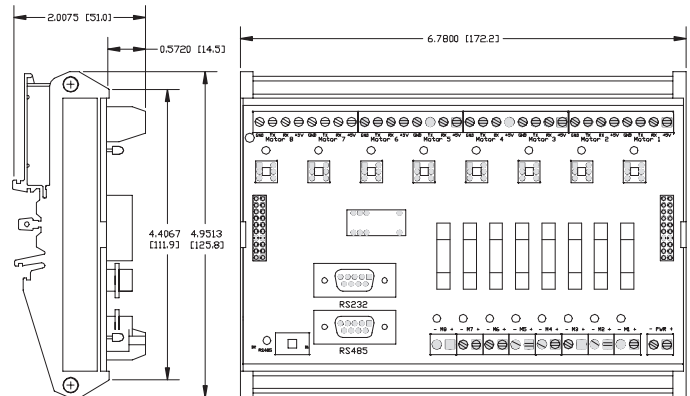
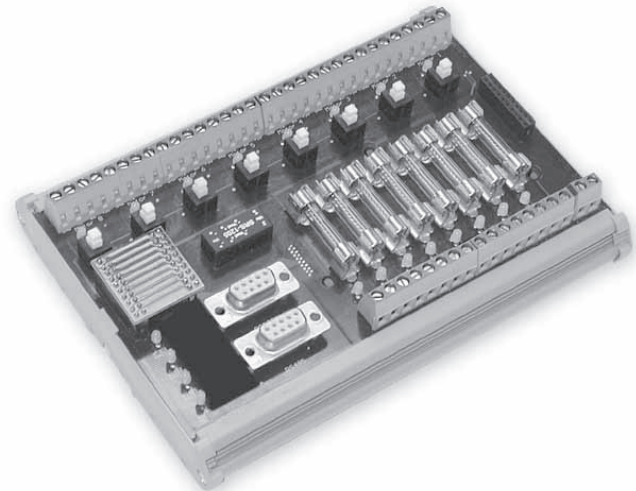
Features	Benefits
DB-15 or screw terminal access to your SmartMotor	Easy connection for panel environment
AniLink port for expansion to other AniLink devices	Cascadable
7 main I/O buses to cross connect I/O to other motors	Flexible use
Aux buses to interconnect encoders between motors	Simplifies encoder connections
Jump-in RS485 terminal resistors	No added parts necessary for RS485 termination
On board DB-9 for fast RS232 access	May be used with standard RS232 extension cables

DIN-RS232

The **DIN-RS232** is a DIN Rail Mount breakout for the OEM and Legend Series RS232 communications. It allows a single Master to communicate with up to eight Animatics SmartMotors over RS232 without the loss of bandwidth typical of daisy chain propagation. Since this operation is nearly identical to the operation of an RS485 bus, the DIN-RS232 can also accommodate an RS485 master.

The DIN-RS232 master communications circuitry can take its power from any industry standard 24VDC power supply. The eight communications links to each of the Animatics SmartMotor™ breakouts are electrically isolated from the master, and are individually powered by its associated SmartMotor. This isolation can be critical to reliable systems where there may be ground bounce in the power runs between the motors.

The DIN-RS232 is able to transmit simultaneously to eight SmartMotors because all of the links are in parallel. This means that the eight transmit and receive lines are functionally tied together. For this reason, the user must treat the eight SmartMotors on this unit as if they were on a parallel communications bus, like RS485. While the user can transmit to all SmartMotors on the bus simultaneously, care must be taken to assure that no two SmartMotors reply at the same time. The DIN-RS232 also has a fused power bus to allow the convenient connection of SmartMotors to a central power input.



* All sizes are given in inches, sizes in brackets are in mm

Features	Benefits
Eight RS-232 communications ports	Isolated interface to eight SmartMotors without daisy chain propagation delay penalty.
Power bus	Fused interconnection to up to eight SmartMotors.
Selectable Master	Choose RS232 or RS485 to be the communications Master

Electrical

Power bus line voltage: 19V to 48VDC
 Isolated communications bus power: 4.5V to 5.5V, 35 mA

Animatics OPTO2 — 16 Channel Opto-isolator Board

Optically isolates and converts signals between:

5VTTL logic and 24VDC Control Logic Systems

- 8 Input Channels
- 8 Output Channels
- Red Fail-Safe LED Indications
- Plug-in connectors
- DIN Rail Mount
- Only 0.84 Inches of rail space
- Shunt Diode protection for Inductive loads

5VDC Logic Side:

- Darlington Output Sinking
- 6.8VDC max input
- 120mA Max. 5VDC Load

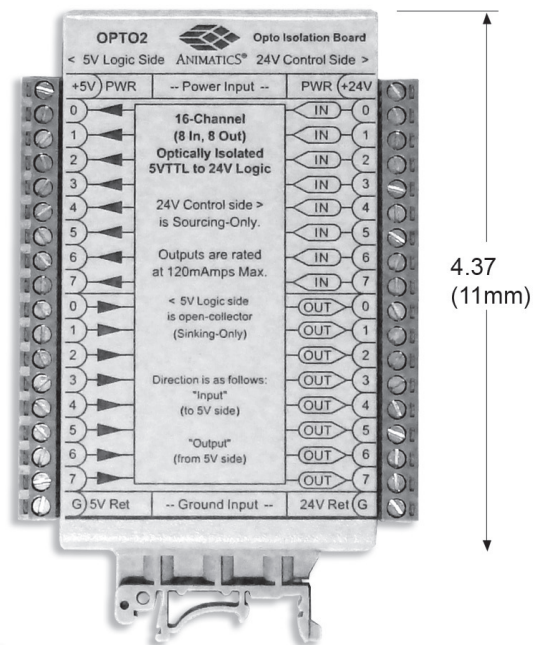
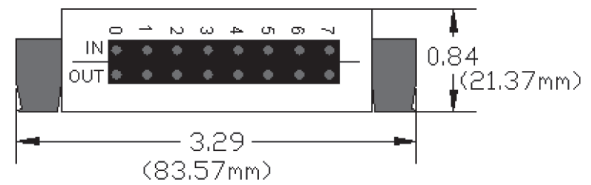
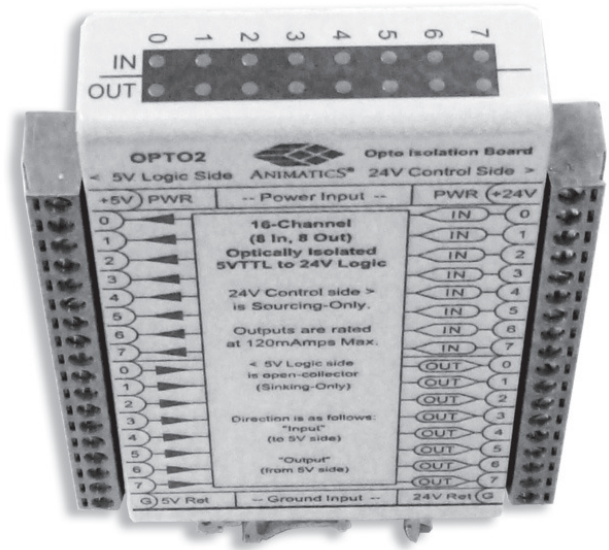
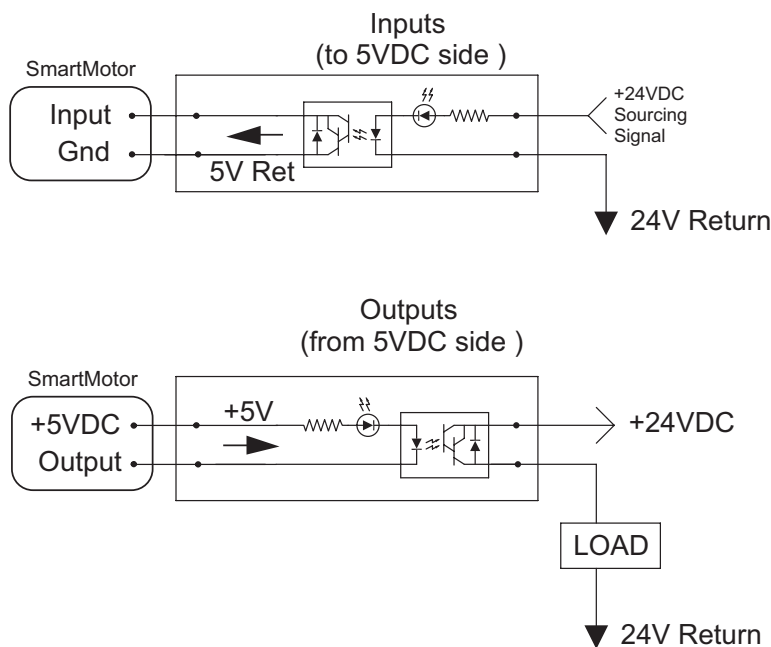
24VDC Control Side:

- Darlington Output Sourcing
- 12 to 32VDC Working Range
- 120mA Max. Load @24VDC

Timing:

- 100 μ Second On/Off max.
- Max. continuous throughput: 250KHz @50% duty cycle square wave.

Sample Schematic of Inputs and Outputs:



SmartBox™: The Handheld Diagnostics and Testing Interface is designed as an aid in test and development of Animatics SmartMotor™ applications. The SmartBox™ is small and compact in size but it offers big returns in convenience and time savings. Its portability and simple operation make it ideal for use at remote locations to run SmartMotor™ functions and for onsite testing.

The SmartBox Hardware consists of:

- Two-Color LED connected to Port C Output can be programmed for 3 states: OFF, ON (Green), or ON (Red)
- Three Position Toggle Switch (Go)-Off-(Sel.) spring return to center
- Analog Input Potentiometer Connected to Port D
- External Encoder Input w/1000 line encoder
- 4 Red LEDs, in two sets wired reverse parallel to Ports E and F to allow for any or all to be turned on or off.
- Cable with 15 pin D-sub I/O connector
- Power Input Jack on side (2.1x5mm)



Sample SmartMotor™ program available:

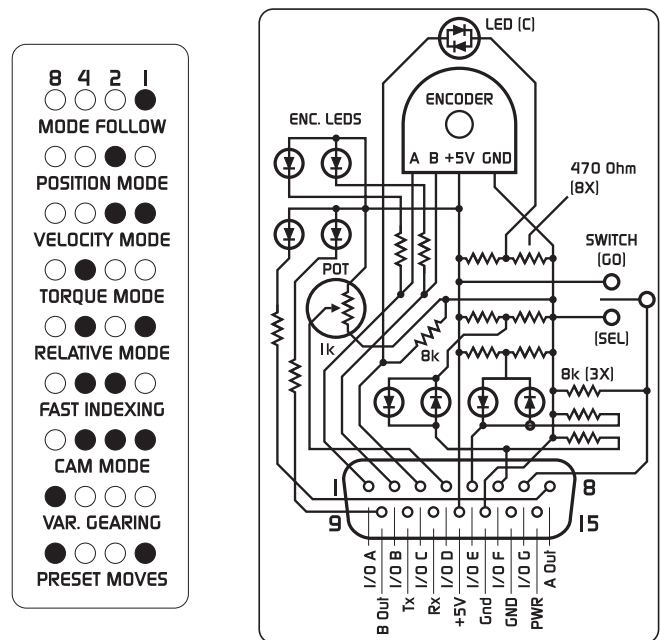
Select from a variety of pre-programmed modes using the Selector switch w/LED indication of Mode corresponding to the label on the side of the unit. This program allows simulation of the following:

- Mode Follow at 1:1 counts V following Encoder Knob
- Position Mode (Adjustable absolute commanded position)
- Velocity Mode (Continuously variable, bi-directional)
- Torque Mode (Continuously variable, bi-directional)
- Relative Mode (Adjustable distance)
- Fast Indexing (Self triggered with adjustable distance and dwell)
- Cam Mode
- Variable Gearing (Continuously adjustable gear ratio)
- Preset Moves (Pre-programmed multi-move profiles)

The SmartBox can test and demonstrate the following hardware connections including:

- Analog input
- Digital I/O
- Step and direction Input
- Encoder I/O

Side and Back Cover Labels:



Note: Demonstration Program available for download at www.animatics.com.

Mode Indicator Legend and schematic are printed on the SmartBox for easy reference

SmartBoxBCD™: Designed for use with SmartSelect™ Software, the Handheld Diagnostics and Testing Interface is similar to standard Animatics SmartBox, but is geared towards PLC I/O handshake simulation. It is intended for use as a means to simulate 5 inputs from a PLC and 2 outputs back to the PLC to aid in development of applications where only On/Off I/O triggering is used to control the SmartMotor™.

The SmartBoxBCD Hardware consists of:

- Two Bi-Color LEDs; one each connected to Ports E and F. Each can be set one of three states: OFF, ON (Green), or ON (Red)
- Five Three-Position Toggle Switches (On)-Off-(Momentary-On.) where center position is off. Connected to Ports A, B, C, D, and G
- Cable with 15 pin D-sub I/O connector
- Power Input Jack on side (2.1x5mm)



When Used with SmartSelect™ Software:

The SmartBoxBCD interface simulates:

- 4-bit binary Input from a PLC on ports A, B, C, and D
- “Go” input from a PLC on Port G
- Busy Output to PLC on Port E
- Fault Output to PLC on Port F

When the Motor receives a “Go” signal, the program responds to 1 of 16 preset move profiles as determined by the 4-bit binary input state of Ports A, B, C, and D. While moving, the “Busy” LED is Red, once done, it switches to Green. If a Fault occurs, the Fault LED switches from Green to Red.

The SmartBoxBCD allows complete set-up and test of a SmartMotor™ in conjunction with the Point-And-Click SmartSelect™ Programming Tool. In doing so, the entire Servo Control of a system can be set up and tested prior to PLC Programming or I/O connections. As a result, machine development time is reduced to a minimum.

Back Cover Label Shows internal Schematic:

