

Avtron SMARTach™ Portable Encoder Analyzer



Incremental Encoder Tester and Simulator

Encoder Analyzer Features

Monitors all aspects of incremental encoders

Optional Windows software generates detailed analysis and reports

Compatible with various encoder input types (Line Driver, Push/Pull, Open Collector)

Generates A, /A, B, /B, Z, /Z square wave signals at set PPR and Frequency

Tests other instruments and systems requiring encoder signals

Portability allows for encoder and system troubleshooting anywhere

Comes with Durable Carrying Case with custom foam insert, AC/DC Power Adapter, USB-B to USB-A Cable

2 Year No-Hassle Warranty

Optional battery allows for testing anywhere AC outlets are not available

Optional adapter cables allow for direct testing without having to tear out existing wiring

SMT1

The SMT1, SMARTach™ Portable Incremental Encoder Signal Analyzer, is a versatile instrument designed to streamline both testing and simulation of incremental encoders, and any other equipment that generates square wave output signals, like linear encoders and flow meters.

This durable and easy-to-use device combines two functionalities, Encoder Testing and Signal Simulation.

Thoroughly evaluate encoder performance by measuring Pulses Per Revolution (PPR), phase separation, high/low ratio, signal frequency, and current draw. The SMT1 allows for direct testing of incremental encoders through their native connector by the use of a native to 9 Pin D-Sub, adapter cable or through its front panel wiring posts using flying leads like those found on the CBL1 encoder cable. Optional DB9 adapter cables are available with each order and allow for direct testing without having to tear out existing wiring.

Replicate real-world encoder outputs to test and troubleshoot encoder-dependent systems. The SMT1 provides two output modes (continuous and single cycle) with adjustable frequency and selectable phase relationships (A/B or B/A) for comprehensive testing scenarios.

The SMT1 eliminates the need for complex setups and multiple instruments, saving you time and effort. Its large LCD display provides clear test results, while the optional Windows software empowers you with detailed analysis and report generation capabilities.

Whether you're an engineer, technician, or anyone working with encoders, the SMT1 is an indispensable tool for ensuring proper operation and efficient system testing.

OUTLINE DRAWING



MORE SMT1 ADVANTAGES

- Selectable voltage supply (5V, 12V, 24V, 24V/5V) with overload protection
- Tests encoder signal quality
- Verifies encoder rotation direction
- User-selectable PPR (pulses per revolution)
- Provides comprehensive test data for encoder performance analysis
- Versatile for various encoder types and applications
- Simplifies encoder simulation for testing

MORE SMT1 SPECIFICATIONS

Input Power Supply: 12 Volts; 1 Amp

Power Adapter Input: 100 - 240 Volts AC

Power Adapter Output: 12 Volts DC; 1.5 A

Testing Limits: A & B Counters Max 99,999; Z Counters 9

Encoder Voltage Supply: 5, 12 or 24V DC

Encoder Load: 150 mA

Input Signal Frequency: 25Hz to 500kHz

Simulator Output Frequency: 20Hz to 500kHz

Temperature: -10°C to 60°C (storage -20°C to 70°C)

Encoder Connection:

Input (Encoder to SMT1)

- 9 Pin Female D-Sub
- 8 Spring Loaded Wiring Posts

Output (SMT1 to Drive)

- 9 Pin Male D-Sub

Computer Connection:

- Ethernet via RJ45
- USB via USB-B to USB-A

Short circuit and over current protected

Automatic turn off with no load

Check out our website for more detailed specifications, drawings, and installation instructions. www.avtronencoders.com

SELECTION GUIDE

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MODEL	DESKTOP SOFTWARE	BATTERY	CABLE 1 STYLE	CABLE 1 CHANNEL	CABLE 1 LENGTH	CABLE 2 STYLE	CABLE 2 CHANNEL	CABLE 2 LENGTH	MODIFICATIONS
SMT1-	S - Desktop Software (USB in Case)	B - Portable Battery (Lithium-Ion) X - No Battery (Best for International Shipping)	A - 10 Pin MS to SMT1 (Small Encoder Pinout) B - 10 Pin MS to SMT1 (Large Encoder Pinout) R - 10 Pin Mini-MS Twist Lock Connector to SMT1 W - Flying Leads to SMT1 1 - Large 10 Pin EPIC Industrial to SMT1 2 - Small 10 Pin EPIC Industrial to SMT1 3 - M12/8 Pin to SMT1, USA Pinout 4 - M12/8 Pin to SMT1, Turck Pinout 5 - M23/12 Pin CW to SMT1 6 - M23/12 Pin CCW to SMT1 U - Universal US Cable Set (A, B, R, W, 1, 2) Z - Universal European Cable Set (3, 4, 5, 6) 0 - Special Connector to SMT1 X - No Cable	A - All Channels (A, /A, B, /B, Z, /Z) X - No Cable	A - 2 ft Cable B - 3 ft Cable (Standard) C - 5 ft Cable D - 10 ft Cable E - 15 ft Cable F - 20 ft Cable G - 25 ft Cable H - 30 ft Cable X - No Cable	A - 10 Pin MS to SMT1 (Small Encoder Pinout) B - 10 Pin MS to SMT1 (Large Encoder Pinout) R - 10 Pin Mini-MS Twist Lock to SMT1 W - Flying Leads to SMT1 1 - Large 10 Pin EPIC Industrial to SMT1 2 - Small 10 Pin EPIC Industrial to SMT1 3 - M12/8 Pin to SMT1, USA Pinout 4 - M12/8 Pin to SMT1, Turck Pinout 5 - M23/12 Pin CW to SMT1 6 - M23/12 Pin CCW to SMT1 U - Universal US Cable Set (A, B, R, W, 1, 2) Z - Universal European Cable Set (3, 4, 5, 6) 0 - Special Connector to SMT1 X - No Cable	A - All Channels (A, /A, B, /B, Z, /Z) X - No Cable	A - 2 ft Cable B - 3 ft Cable (Standard) C - 5 ft Cable D - 10 ft Cable E - 15 ft Cable F - 20 ft Cable G - 25 ft Cable H - 30 ft Cable X - No Cable	000 - No Modifications