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T-Cube™ Solenoid/Shutter Controller (Page 1 of 2)

TSC001

The T-Cube™ Solenoid Controller (TSC001) is a compact, single-channel controller that provides easy manual and automated control of solenoid-operated shutters, flipper mounts, and other similar devices. Designed to operate 15 V solenoid-actuated devices, this miniature controller offers a complete set of control features via an embedded DSP processor, which provides a multitude of flexible operating modes. Embedded software functionality allows this unit to be used to control solenoid devices manually (using panel buttons), automatically with DSP-timed operation, or with external trigger signals for operation with third-party equipment. A trigger out connection allows multiple T-Cube™ controllers to be connected together for multichannel synchronized operation.

The TSC001 may be used as a stand-alone device or combined with the T-Cube™ Controller Hub (TCH002) for applications utilizing multiple T-Cubes. The manual controls for this unit are conveniently located on the upper surface. The mode button switches the unit between the various operating modes, while the enable button is used to initiate manual or automatic operation of the solenoid controller output. There is also a safety key switch and interlock plug fitted to this compact unit for use in laser safety applications. USB connectivity provides easy plug-and-play, PC-controlled operation.

Coupling the controller with the very user-friendly apt™ software (supplied) allows the user to get set up quickly. Advanced custom control sequences are also possible using the extensive ActiveX® programming environment.

For multi-channel applications, the TCH002 USB Controller Hub contains a fully compliant USB 2.0 hub circuit, providing power and communications for up to six T-Cubes – a single USB connection to the Controller Hub is all that is required for PC control. See pages 620 - 621 for more details.

Features

- Compact Footprint
- Full apt™ Software Control Suite Included
- Automatic, Single, Manual, and Triggered Operating Modes
- Operates Thorlabs' Solenoid-Actuated SH05 Shutter
- Manual- or PC-Controlled Operation via USB
- Input/Output Triggering (Daisy Chaining)
- Safety Enabled Key Switch
- Laser Safety Interlock Jack
- Extensive ActiveX® Programming Interfaces
- Software Compatible with Other apt™ Controllers

Specifications

- **Timing Resolution:** 250 μ s
- **On/Off Times:** 100 ms to 10 s
- **Maximum Repetition Rate:** up to 10 Hz
- **Trigger In/Out (SMA Connected):** TTL
- **Output Enable:** Key Switch and Interlock Jack Plug
- **Operating Modes:**
 - Manual: User-Controlled On/Off
 - Single: DSP-Controlled Single On/Off Cycle
 - Auto: DSP-Controlled Multiple On/Off Cycles
 - Triggered: Externally Triggered On/Off
- **Output (6-Way Hirose Connectors):**
 - Solenoid Drive: 15 V Pulse (10 V Hold)
 - Position Sensor Feedback: Photodiode
- **Input Power Requirements:**
 - Voltage: 15 V Regulated DC
 - Current: 1 A Peak, 300 mA Steady State
- **Housing Dimensions (W x D x H):** 2.36" x 2.36" x 1.87" (60.0 mm x 60.0 mm x 47.5 mm)
- **Weight:** 5.5 oz (160 g)



TSC001

T-Cube™ Solenoid/Shutter Controller (Page 2 of 2)

TSC001 Solenoid Controller Applications

The TSC001 Solenoid Controller has been designed to also control third-party, solenoid-operated devices with a maximum voltage of 15 V and a maximum current of 1 A. Thorlabs offers a solenoid-operated beam shutter (SH05, see page 361) that is compatible with the TSC001 Solenoid Controller.

Power Supply Options

OPERATION	RECOMMENDED POWER SUPPLY
Stand-Alone or Single-Channel Operation	TPS001 or TPS008
System or Multichannel Operation	TCH002



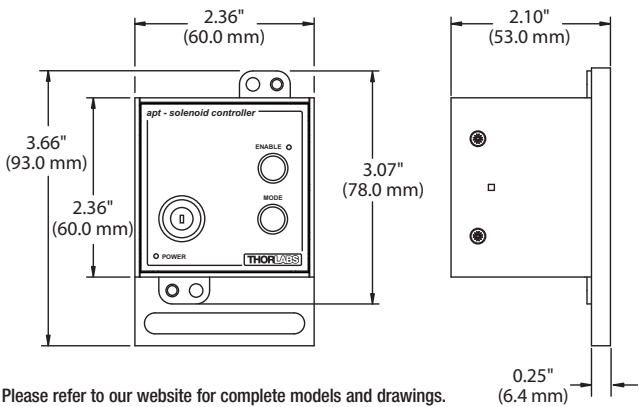
TSC001 Controller with
SH05 Shutter

Have you seen our...

T-Cube™ Controller Hub TCH002



See pages 620 - 621



Please refer to our website for complete models and drawings.

ITEM #	\$	£	€	RMB	DESCRIPTION
TSC001	\$ 545.00	£ 392.40	€ 474.15	¥ 4,343.65	T-Cube™ Flipper/Shutter Controller
SH05*	\$ 438.00	£ 315.36	€ 381.06	¥ 3,490.86	Beam Shutter with Ø1/2" Aperture
TPS001	\$ 25.00	£ 18.00	€ 21.75	¥ 199.25	15 V Power Supply Unit for a Single T-Cube
TPS008	\$ 175.00	£ 126.00	€ 152.25	¥ 1,394.75	15 V Power Supply Unit for up to 8 T-Cubes
TCH002	\$ 726.90	£ 523.37	€ 632.40	¥ 5,793.39	T-Cube™ Controller Hub and Power Supply Unit

*For specifications see page 361