

Model T700U Dynamic Dilution Calibrator



Control Analytics, Inc. is proud to introduce the Model T700U, a microprocessor-based calibrator for precision gas analyzers. Using highly accurate mass flow controllers combined with compressed sources of standard gases, calibration standards are provided for multipoint span and zero checks using up to 4 gas sources.

In addition to the features of the Model T700, the Model T700U is designed for the demanding requirements of ultra-sensitive measurements. The ability to calibrate and verify linearity for NO₂ at levels below 5 ppb is difficult with standard calibrators. To overcome this limitation, the Model T700U ozone generator operates in two modes: a high range with similar performance to the Model T700 ozone generator, and a low range, or “fractional” mode, for producing accurate ozone levels down to 3 ppb to ensure the highest accuracy of NO₂ output. The calibrator measures the ozone concentration prior to performing a GPT, and the range is selected automatically by the Model T700U based on ozone concentration and flow specified by the user.

All T Series instruments offer an advanced color display, a capacitive touch screen, intuitive user interface, flexible I/O, and built-in data acquisition capability. All instrument set up, control and access to stored data and diagnostic information is available through the front panel, or via RS232, Ethernet, or USB com ports either locally or by remote connection using the included APIcom software.

Features Include:

- Built-in photometer, ozone generator, and GPT chamber
- Ultra-low gas phase titration (GPT) for generating NO₂ levels down to 3 ppb with exceptional accuracy
- Large, vivid, and durable color graphics display with touch screen interface
- Ethernet, RS-232, and (optional) USB com ports
- Front panel USB connections for peripheral devices and firmware upgrades
- 12 independent timers for sequences
- Nested sequences (up to 5 levels)
- Software linearization of mass flow controllers (MFC)
- 4 calibration ports (configurable for single or multi-blend gases)
- 3rd MFC for wide dynamic range (optional)
- Glass gas phase titration chamber (GPT)
- Inlets for external ozone reference sources



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Specifications

Dilution System

Flow Measure Accuracy:	± 1% of full scale
Repeatability of Flow Control:	± 0.2% full scale
Linearity of Flow Measurements:	± 0.5% full scale
Flow Range of Dilution Air:	0 to 10 SLPM
Flow Range of Cylinder Gases:	0 to 200 cc/min
Zero Air Requirements:	10 SLPM @ 30psi
Optional:	20 SLPM @ 30 psi
Input Pressure:	20-40 psig required
Calibration Gas Input Ports:	4 (configurable)
Diluent Gas Input Ports:	1

NO₂ Generation (GPT modes)

Minimum Output:	20 ppb LPM
Minimum Concentration:	3 ppb
Precision:	± 2% (with GPTPS)

Ozone Generator Module

Maximum Output:	6 ppm LPM
Minimum Output:	100 ppb LPM
Response Time:	180 seconds to 98%
Optical Feedback:	Standard
Stability (7 days):	1%
Linearity:	1%

UV Photometer Option

Range:	100 ppb to 10 ppm (selectable)
Precision:	1.0 ppb
Linearity:	1.0% of reading
Rise/Fall Time:	-20 seconds (photometer response)
Response Time:	180 seconds to 95% (system response)
Zero Drift:	<1.0 ppb/24 hours
Span Drift:	<1% / 24 hours

Electrical Specifications

Power Requirements:	85V-264V, 47Hz-63Hz
Analog Output Ranges (Test Channel):	10V, 5V, 1V, 0.1V (selectable)

Communication Specifications

Included I/O:	1 x Ethernet: 10/100 Base-T 2 x RS232 (300-115,200 baud) 2 x USB device ports 8 x digital control outputs 12 x digital control inputs 8 x digital status outputs
Optional I/O:	1 x USB com port 1 x RS485 Multidrop RS232

Physical Specifications

Operating Temperature Range:	5 - 40° C
Dimensions (HxWxD):	7" x 17" x 24" (178 x 432 x 609 mm)
Weight:	31 lbs (14.06 kg) 39.2 lbs (17.78 kg) with photometer, GPT, and O ₃ generator

The values expressed above are in accordance with EPA definitions. All error specifications are based on constant conditions. Specifications subject to change without notice. Printed documents are uncontrolled. SAL000063B (DCN 5880) T700U/10.13.10

How To Order:

Model T700U includes:

Two year warranty	
O ₃ generator with photometer feedback and GPT mixing chamber	
UV photometer module	
4 calibration gas inlet ports	
1 diluent gas inlet port	
8 digital control outputs	
12 digital control inputs	
8 digital status outputs	
RS-232 ports	
Ethernet port	
USB ports for peripheral devices	
APIcom™ remote control software	
Select AC input voltage	
▪ 100V - 120V	▪ 50Hz
▪ 220V - 240V	▪ 60Hz
Select DC output voltage	
▪ 10V	▪ 5V
▪ 1V	▪ 0.1V

Mounting Options:

Rack mount brackets with chassis slides
Rack mount brackets only
Handle

I/O Options:

USB com port
Multi-drop RS232
RS485
12V external valve driver
24V external valve driver

Other options:

3rd source MFC (optional)
Photometer certifications
Expensables kit



For more information or a no-obligation quote, contact:
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