

# WATLOW F4T COMPUTER ACCESS OPTIONS

ESPEC'S CHOICES FOR WATLOW F4T  
DATA LOGGING AND REMOTE APP  
ACCESS



# SEVERAL CHOICES FOR WATLOW F4T REMOTE ACCESS

**In a nutshell (see following pages for details):**

1. Web Controller: ESPEC's most complete solution: Datalogging, profile creation, email alarms, Restful API
2. Chamber Connect Software: Simple ESPEC PC software designed for datalogging
3. Chamber Connect Library: Basic code for connecting to F4T for custom applications
4. USB port activation: Allows use of USB port for data download.
5. SCPI and Modbus protocols: Programming interfaces standard with F4T

NOTE: The standard Ethernet TCP/IP port on Watlow F4T does not have any useable software included. ESPEC does not recommend Watlow software solutions for general users.

# F4T COMMUNICATION OPTIONS

## DETAILED CHART

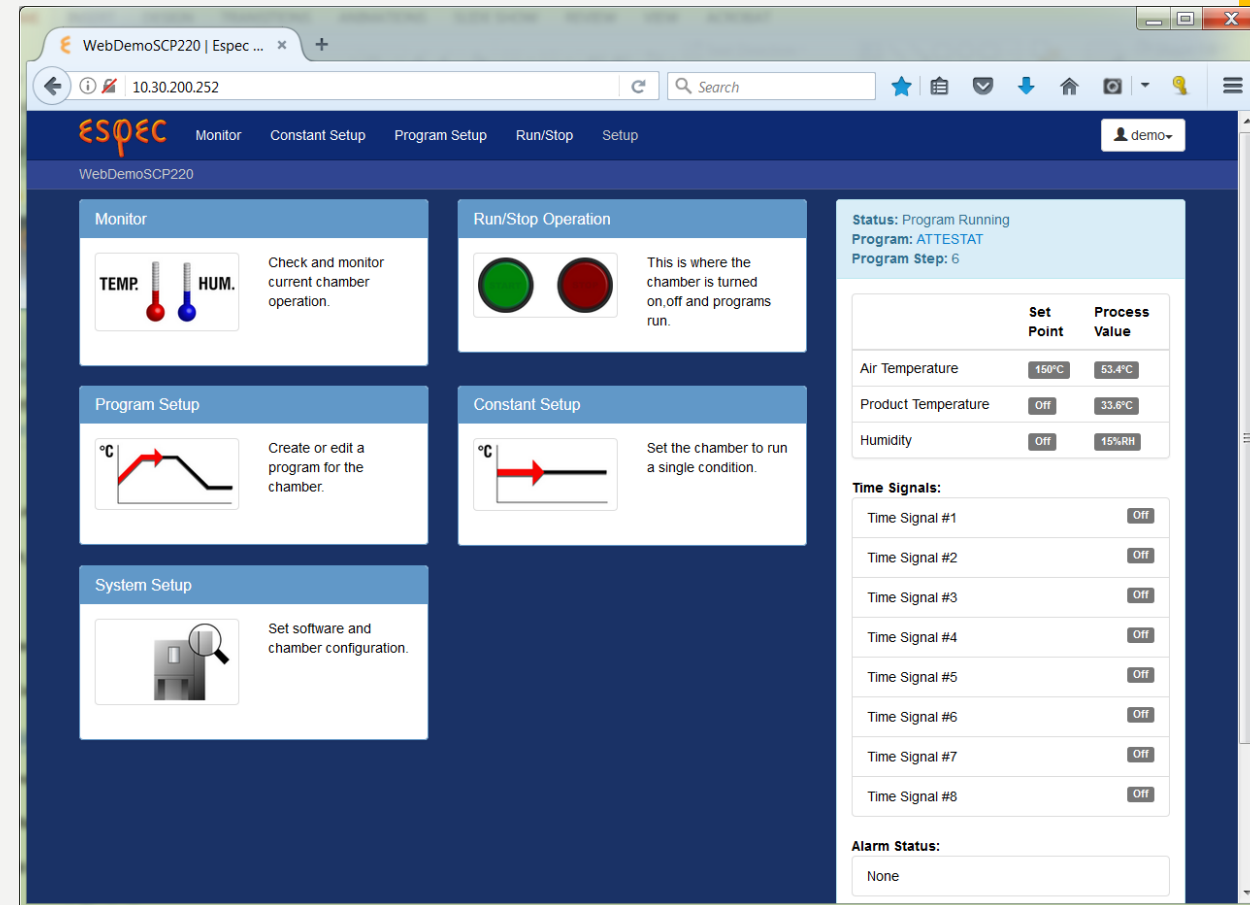
Tool	Create test recipe/profile	Data logging	Data view	Alarm/email	Hardware	Notes	Cost
1. Web Controller by ESPEC	Yes	History (CSV)	Yes	Yes	Host server device included	Browser-based application. API for app integration. Command pass-thru for Modbus	Contact ESPEC
2. Chamber Connect Software by ESPEC	No	Live (CSV)	No	No	User's PC	Software will show status and log data while connected to the F4T.	\$100
3. Chamber Connect Library by ESPEC						Core source code for connecting to Watlow F4T. Download at Github.com	Free
4. USB Data Acquisition	No	History (CSV)	Yes	No	Thumb drive	Enables downloads from stored data on Watlow F4T. <i>Not a standard feature.</i>	Contact ESPEC
5. SCPI or Modbus Protocols					Std. TCP/IP (optional serial port)	Includes register set for older Modbus F4 programs. Ask ESPEC for register reference guide.	Included

Labview is unsupported. Try generic Modbus drivers. Ask ESPEC for register reference guide.

# 1. WEB CONTROLLER

## Web server for remote access via a browser

- Host server allows access from any device on the local network
- Scalable screen for any device
- See current chamber operational status including trend-graph
- Data log operation as a CSV file
- Network share of data history (CSV)
- Profile upload/download and back-up
- Alarm notification via email
- **API for full access from external apps**

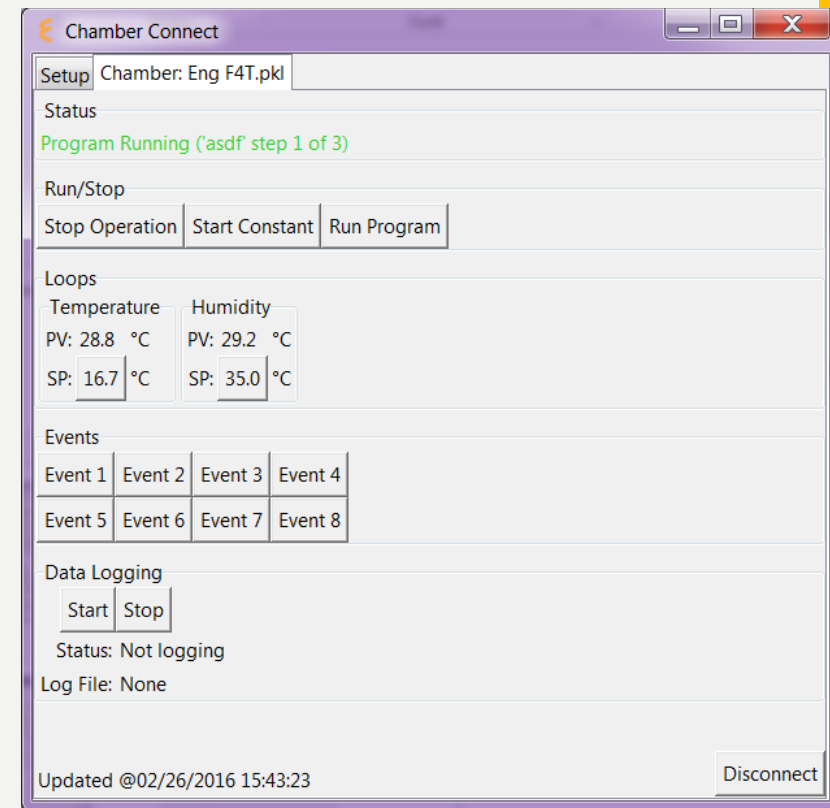


Try a live demo at [www.espec.com/demo.htm](http://www.espec.com/demo.htm)

# 2. CHAMBER CONNECT SOFTWARE

## Monitor, data log, and change settings remotely

- Connects via Ethernet so host PC can be anywhere on the network
- See current chamber operational status
- Data log controller operation as a CSV file
  - Temperature & humidity (setpoint and actual), date/time, status
- Start and stop operation remotely (ESPEC exclusive functionality)
- Change constant set points and activate event relays
- Connect multiple chambers at the same time



# 3. CHAMBER CONNECT LIBRARY

ESPEC has published a core library of code for help users jump-start their custom software applications. This library uses Python code, but is applicable for other languages. Free!



<https://github.com/EspecNorthAmerica/ChamberConnectLibrary>

# 4. USB DATA DOWNLOAD

The Watlow F4T can have a firmware upgrade to allow data downloading via USB. A USB port will be added to the exterior option panel.

Best suited for users who cannot connect (or keep connected) the chamber to a network via standard Ethernet.

Note: USB port on the controller is not useful without this upgrade.

*ESPEC will also include on-screen graphing feature with this upgrade.*

# 5. SCPI OR MODBUS PROTOCOLS

The F4T controller is equipped with Modbus TCP and Standard Commands for Programmable Instruments (SCPI) as embedded protocols. A Modbus register compatible with legacy F4 applications is also included.

Refer to Watlow's F4T Setup and Operations Manual Chapter 6: Appendix. Available at <http://f4t.watlow.com> (scroll to bottom of the webpage).

RS-232/485 serial port is available as an add-on to F4T, if desired. Note: SCPI works only with TCP/IP.

## User Manuals

User Guide: Setup & Operations

User Guide: Installation & Troubleshooting

Quick Start Guide: F4T Controller Base

Quick Start Guide: Flex Module Mixed Input/Output Flex Modules

Quick Start Guide: Flex Module MODBUS® RTU Communications Flex Modules

Quick Start Guide: High Density Input/Output Flex Modules



# WHAT ABOUT WATLOW OFFERINGS?

Software offerings by Watlow have limited value to typical users of ESPEC chambers and will not be supported. Users should download/purchase directly from Watlow only if needed.

- Composer software is primarily for initial configuration (ESPEC already configures the controller) and some profile access. **Only function for regular use is to create profiles on the F4T. That's it!**
- Specview/Scada software is for more sophisticated applications.
- Watview software does not work with F4T.

USB download feature is a firmware upgrade ESPEC will sell and install on the F4T when requested by users. A USB connection will be added to the option panel on the exterior of the chamber if ordered with the chamber. Our Web Controller can do the same functions and is generally more versatile.

# FIELD INSTALL?

Some users may decide they need a DAQ solution after they get their chamber.

- Web Controller: Available as an external or internal kit.
- Chamber Connect: Software only, can be easily used after the fact.
- USB firmware: Can be upgraded in the field by the user or a technician.

# TIPS

- **Do not connect more than one app to the F4T at a time!** Multiple requests will slow down the controller and could cause problems. If you have a Web Controller, it needs to be unplugged before accessing the F4T with your own app.
- ESPEC recommended software approach is Python code accessing the Web Controller's API. (This is how the Web Controller was built.)
- Labview is unsupported. Try generic Modbus drivers. Ask ESPEC for a register reference guide. Consider using Web Controller's API instead.
- The USB port is not functional with a firmware upgrade.
- The standard Ethernet TCP/IP port on Watlow F4T does not have any useable software included.