ControlWorks Weather Lite Module Application Guide

Description

This module allows a 2-series or 3-series Crestron processor with a connection to the internet to download and display current weather conditions and a brief, short-term weather forecast for one “home” location.

Your processor must have Ethernet capability and be connected to the internet. The processor must also have DNS servers declared and other pertinent settings such as hostname and domain name configured properly.

Internet Disclaimer

This module requires Internet access and it depends on a web-based service to provide content to ControlWorks Consulting. As such, ControlWorks Consulting is unable to guarantee full time availability of weather content. In the event of an outage, ControlWorks will work as quickly as possible to get the content back online.

ControlWorks Consulting, LLC accepts no responsibility for the accuracy or your usage of data returned by the module.

Supported Processors

Any 2-series or 3-series processor with an Ethernet card is supported.

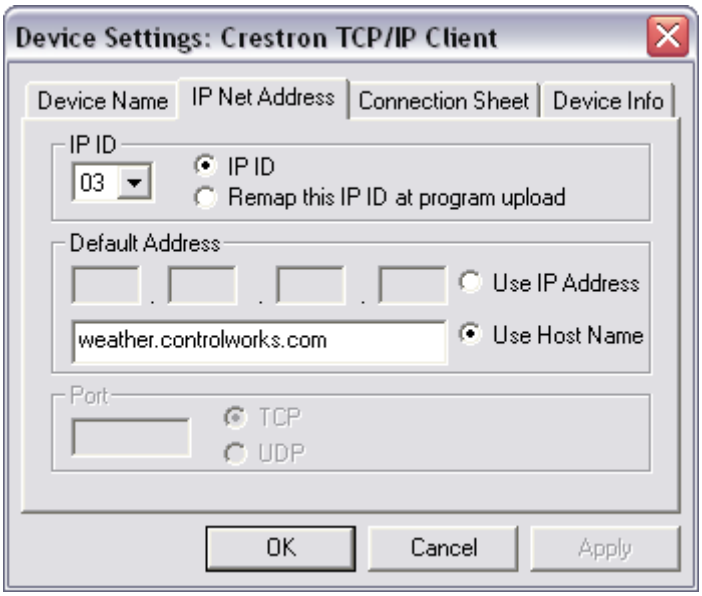
Compatibility			Processor Requirements	
3 COMPATIBLE	2 SERIES COMPATIBLE	System Builder COMPATIBLE	Ethernet REQUIRED	Compact Flash NOT NEEDED

Telephone: (+1)440-449-1100 support@controlworks.com http://www.controlworks.com

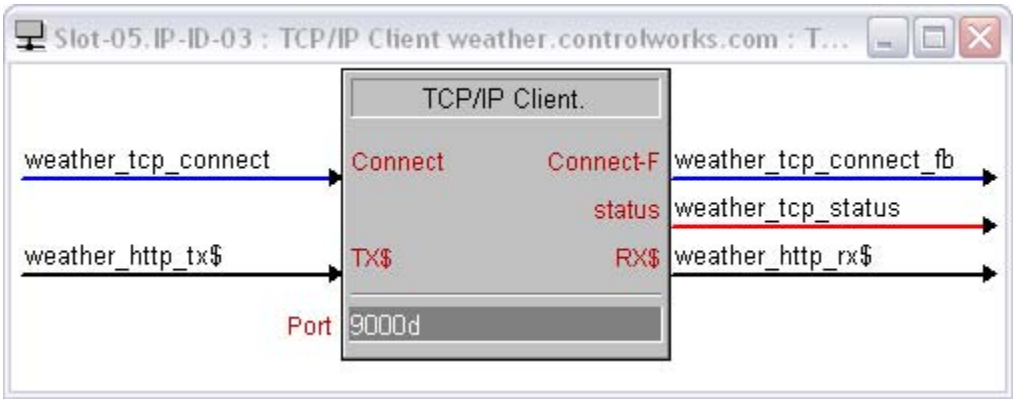
Ethernet Configuration Information

The processor must have DNS servers and hostname declared in the DNS Management and Ethernet Addressing setup. To declare DNS servers from Toolbox, connect to your processor and select "DNS Management …" from the "Functions" menu. Use the DNS server IP addresses provided by the Internet Service Provider of the project, or from open DNS servers available on the internet. Be sure to test the settings by using the "Test…" button and entering a domain name such as www.controlworks.com. Declare a Hostname by selecting "Ethernet Addressing…" from the "Functions" menu. Enter a Hostname in the "Host Name" field. The Hostname can be any combination of letters, numbers and select symbols, as long as the Hostname is unique on the network.

Insert a TCP/IP client into your program. Configure the client as shown below, making sure you use the host name weather.controlworks.com as the default address. The IP ID will vary depending on where it is inserted into the program, or the IP ID numbering scheme of the system.



Declare the TCP/IP client symbol as shown below, making sure the port is set to 9000d.



Module Application

This module is a service-based module. For the module to function, you must have an active service account with ControlWorks Consulting, LLC. To sign up for a service account, and for terms of service visit http://admin.controlworks.com . Once an account is set up for the project, the "client id" parameter field must be filled out with the client ID assigned at the time of creating the account.

Formatting for weather requests should be in one of the following forms;

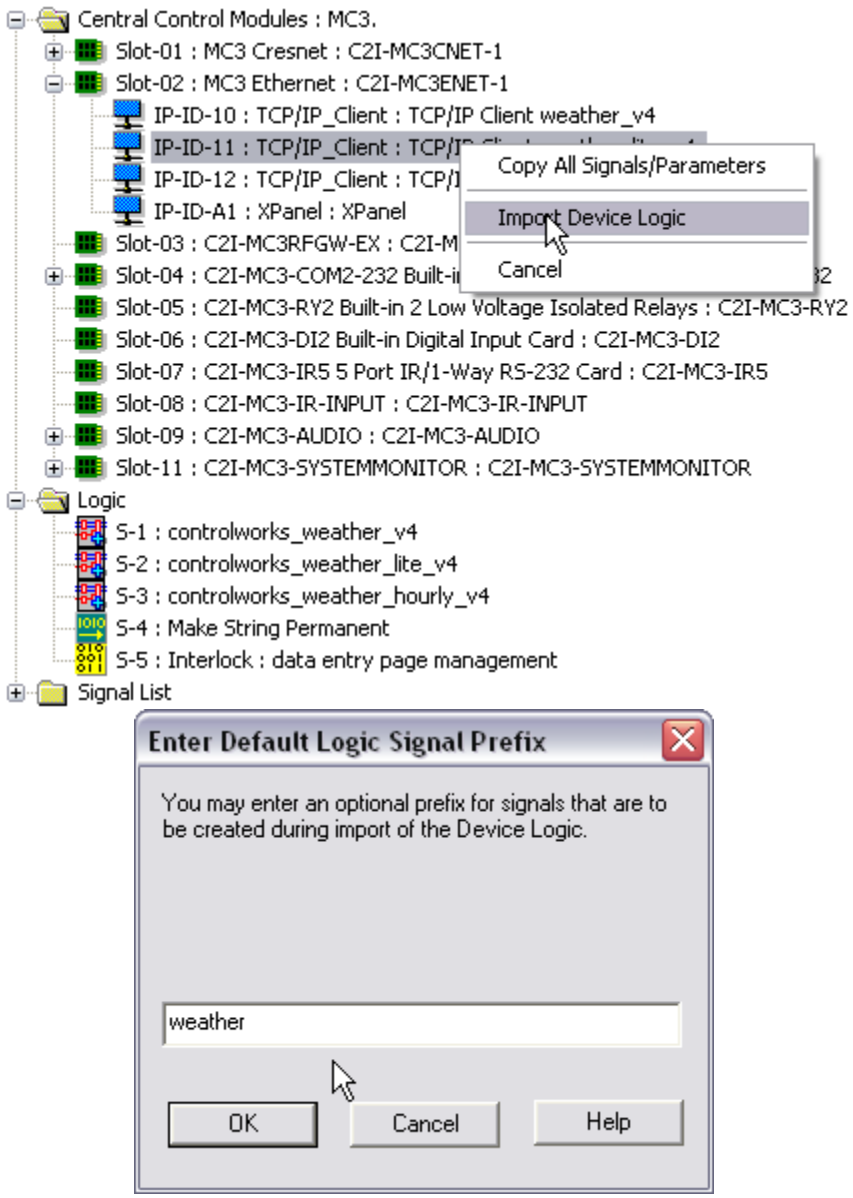
- 5 digit U.S. zip code
- 4 character ICAO code, such as LFPB. ICAO codes can be found at this third-party site. http://www.airport-technology.com/icao-codes/
- U.S. city, full state name. A space between the comma and the full state name can be entered, but is not required.
- U.S. city, 2 letter state abbreviation. A space between the comma and the 2 letter state name abbreviation can be entered, but is not required.
- Canadian city, full province name. A space between the comma and the full province name can be entered, but is not required.
- Canadian city, 2 letter province abbreviation. A space between the comma and the 2 letter province name abbreviation can be entered, but is not required.

Forecasts based on an ICAO code are usually not as detailed as other requests.

Forecast data provided from the source is updated only several times per day, therefore requests to refresh the data should only be made in a similar timeframe. Current condition data provided from the source is updated approximately every hour and a half, therefore requests to refresh the data should only be made in a similar timeframe.

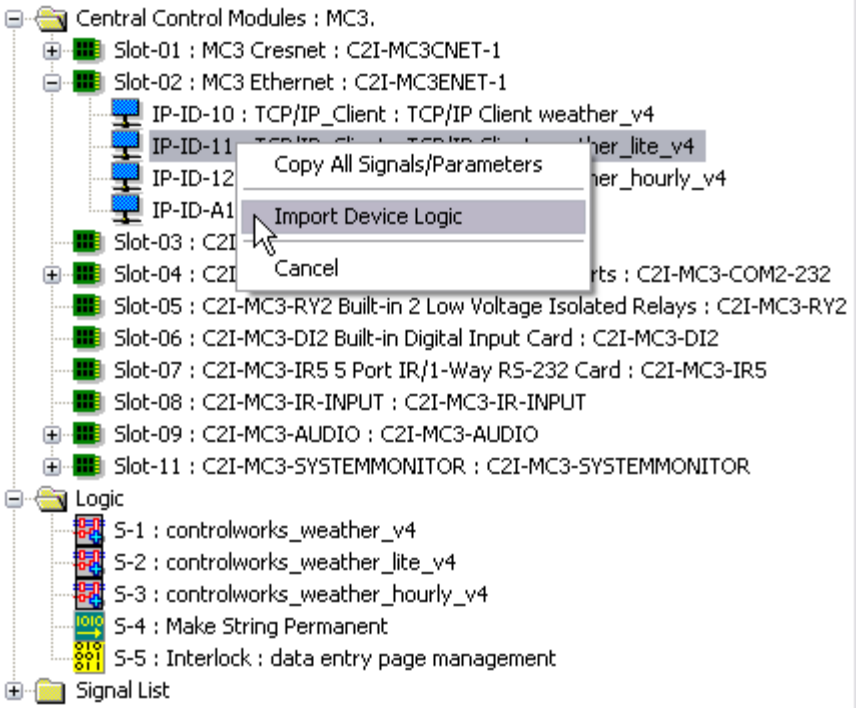
This module is built utilizing virtual connection logic that will allow you to right-click and drag the module symbol to a TCP/IP client symbol, select "Import Device Logic" to auto-connect the two symbols. You will be prompted to add an optional signal prefix to the auto-connected signals. SIMPL will add an underscore character at the end of the prefix you enter automatically, so a space or underscore does not need to be entered in this dialog. Due to Crestron's implementation of this feature, the programmer will still need to manually enter the port number (9000d) on the TCP/IP client symbol.

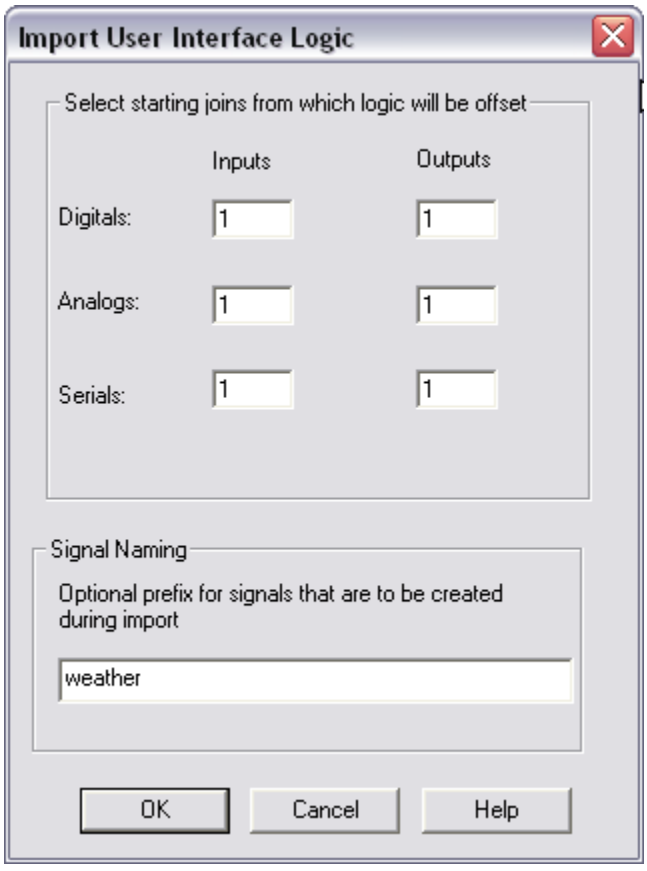
The SIMPL module file, "controlworks_weather_lite_v4.umc" and the SIMPL+ file, "controlworks_weather_parser_lite_v4.usp" are encrypted.



Also utilized is connection logic enabling you to right-click and drag the weather module symbol to a touchpanel to have all of the two symbols auto-connected. Right-click and drag the weather module symbol to a touchpanel and select “Import User Interface Logic” from the drop-down list. You will be prompted for starting join offsets and a signal prefix. Using values of 100 for all of the offsets will connect the joins to match the demo touchpanel files

included in the distribution package. You may change this offset to suit the needs of you project.





The module will automatically update the current conditions based on the value placed on the “Update Frequency” parameter of the module. Valid entries for this parameter are “Daily [24d]”, “Every 12 hours [12d]”, “Every 6 hours [6d]”, and “Every 3 hours [3d].”

Signal and Parameter Descriptions

Bracketed signals such as "[signal_name]" are optional signals

DIGITAL INPUTS

weather_tcp_connect_fb ..... Route to the Connect-F output of the TCP/IP client.
[clear_message] ..... Pulse to clear the message_fb and message$ signals.

ANALOG INPUTS

[weather_tcp_status] ..... Routed from the TCP/IP client symbol. Indicates the status of the connection.

SERIAL INPUTS

weather_http_rx$ ..... Route from the TCP/IP client rx$ output.

DIGITAL OUTPUTS

weather_tcp_connect	Route to the Connect input on the TCP/IP client.
[message_fb]	Latched high as long as the module needs to display a message to the user. This should be used to drive a subpage that will contain an indirect text field containing the message$ signal.
[warning_fb]	Latched high as long as the forecast for the current location contains a weather warning such as a severe thunderstorm warning.

ANALOG OUTPUTS

[current_icon_multimode]	Used to drive a multimode button containing all of the graphics for the current conditions icon.

SERIAL OUTPUTS

weather_http_tx$.	Route to the TCP/IP client tx$ input.
message$.	Text to display a message to the user. Usually a status message
[city$]	City name of the current location.
[state$]	State name of the current location.
[location$]	Formatted location in City, State format for current US location.
[current_timestamp$].	Timestamp provided by the reporting agency for the current conditions for the current location.
[current_warning$].	Warning message, if one is active for the current location.
[current_sky$].	Current sky conditions for the current location. An example would be “Partly Cloudy”.
[current_temperature$]	Current temperature in degrees Fahrenheit for the current location.
[current_humidity$]	Current humidity in percent for the current location.
[current_wind$].	Formatted current wind information. Formatted as direction, speed and gust speed in MPH.
[current_pressure$].	Current barometric pressure for the current location.
[current_dewpoint$].	Current dew point for the current location.
[current_heat_index$]	Current heat index for the current location.
[current_wind_chill$].	Current wind chill for the current location.
[current_remarks$].	Any special remarks for the current location.
[current_visibility$]	Current visibility in miles for the current location.
[forecast_day_title$1] - [forecast_day_title$3]	Title of the forecast for the current location for the next three time periods. Examples would be “Today” or “This Afternoon”.
[forecast1_line1$] – [forecast3_line4$]	Individual text output for the forecast. The forecast is broken up into parts 1-4 to accommodate the limitations of text fields on Crestron touchpanels. Field length is determined by the “notes length” parameter.

PARAMETERS

client id..... Enter the unique client id number given when registering this module to a particular job site. This module will not function if the client id entered here does not match the number assigned to the job site. You can register the module at admin.controlworks.com

home location. ..... Location value for the desired current conditions information. Value must be entered as one of the following; a five digit U.S. zip code, a four character ICAO airport code, or, for U.S. or Canadian locations, a string with the city name followed by a comma then the state or province name or two-letter abbreviation.

update frequency..... The module will automatically update the current conditions based on the value placed on the “Update Frequency” parameter of the module. Valid entries for this parameter are “Daily [24d]”, “Every 12 hours [12d]”, “Every 6 hours [6d]”, and “Every 3 hours [3d].”

Support

This module is supported by ControlWorks Consulting, LLC. Should you need support for this module please email support@controlworks.com or call us at 440-449-1100. ControlWorks normal office hours are 9 AM to 5 PM Eastern, Monday through Friday, excluding holidays.

Before calling for support, please ensure that you have loaded and tested operation using the included demonstration program and touchpanel(s) to ensure that you understand the correct operation of the module. It may be difficult for ControlWorks to provide support until the demonstration program is loaded.

Updates, when available, are automatically distributed via Email notification to the address entered when the module was purchased. In addition, updates may be obtained using your username and password at http://www.thecontrolworks.com/customerlogin.aspx.

Distribution Package Contents

The distribution package for this module should include:

controlworks_weather_v4_demo.smw .....Sample SIMPL windows program for a PRO2
controlworks_weather_v4.umc .....User module to insert in program
controlworks_weather_parser_v4.usp .....SIMPL+ module used by .UMC file
Base64 Encode Engine v1.usp .....SIMPL+ module used by .UMC file
Two String Comparison v1.usp .....SIMPL+ module used by .UMC file
cworks_weather_tpmc17_v4.vtp .....Sample touchpanel file
cworks_weather_TPS-4L_v4.vtp .....Sample touchpanel file
cworks_weather_TPS-12_v4.vtp .....Sample touchpanel file
cworks_weather_TPS-15_v4.vtp .....Sample touchpanel file
cworks_weather_TPS-3000_v4.vtp .....Sample touchpanel file
cworks_weather_XPANEL_v4.vtp .....Sample touchpanel file
controlworks_weather_hourly_v4.umc .....User module to insert in program
controlworks_weather_hourly_parser_v4.usp .....SIMPL+ module used by .UMC file
controlworks_weather_lite_v4.umc .....User module to insert in program
controlworks_weather_parser_lite_v4.usp .....SIMPL+ module used by .UMC file

Revision History

v1 gary@controlworks.com 2008.02.27
- -Initial release

v2 gary@controlworks.com 2008.09.15
- -Added short-term forecast data
- -Added improved handling of locations not found in the database
- -Improved initial parsing of data file for speed
- -Improved presentation of data to outputs

v3 gary@controlworks.com
- -fixed bug where forecast would not display when there was an active warning

v4 gary@controlworks.com 2011.04.12
- -added two more forecast entries
- -release for Series 3 processor compatibility and testing

Development Environment

This version of the module was developed and tested on the following hardware and software. Different versions of hardware or software may or may not operate properly. If you have questions, please contact us.

Hardware	**Firmware Version**
Crestron MC3 Processor	1.000.0027
Crestron PRO2 Processor	4.001.1012
Software	**Software Version**
Crestron SIMPL Windows	3.01.24.00
Crestron Vision Tools Pro-e	4.2.14.02
Crestron Database	25.00.002.00
Device Database	33.00.005.00

ControlWorks Consulting, LLC Module License Agreement

Definitions:

ControlWorks, *We*, and *Us* refer to ControlWorks Consulting, LLC, with headquarters located at 701 Beta Drive, Suite 22 Mayfield Village, Ohio 44143-2330. *You* and *Dealer* refer to the entity purchasing the module. *Client* and *End User* refer to the person or entity for whom the Crestron hardware is being installed and/or will utilize the installed system. *System* refers to all components described herein as well as other components, services, or utilities required to achieve the functionality described herein. *Module* refers to files required to implement the functionality provided by the module and may include source files with extensions such as UMC, USP, SMW and VTP. *Demo Program* refers to a group of files used to demonstrate the capabilities of the Module, for example a SIMPL Windows program and VisionTools Touchpanel file(s) illustrating the use of the Module but not including the Module. *Software* refers to the Module and the Demo Program.

Disclaimer of Warranties

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Provision of Support

We provide limited levels of technical support only for the most recent version of the Module as determined by Us. We do not provide support for previous version of the module, modifications to the module not made by Us, to persons who have not purchased the module from Us. In addition, we may decline to provide support if the Demo Program has not been utilized. We may withdraw a module from sale and discontinue providing support at any time and for any reason, including, for example, if the equipment for which the Module is written is discontinued or substantially modified. The remainder of your rights and obligations pursuant to this license will not be affected should ControlWorks discontinue support for a module.

Modification of Software

You may not decrypt (if encrypted), reverse engineer, modify, translate, disassemble, or de-compile the Module in whole or part. You may modify the Demo Program. In no event will ControlWorks Consulting, LLC be liable for direct, indirect, incidental or consequential damages resulting from You modifying the Software in any manner.

Indemnification/Hold Harmless

ControlWorks, in its sole and absolute discretion may refuse to provide support for the application of the Module in such a manner that We feel has the potential for property damage, or physical injury to any person. Dealer shall indemnify and hold harmless ControlWorks Consulting LLC, its employees, agents, and owners from any and all liability, including direct, indirect, and consequential damages, including but not limited to personal injury, property damage, or lost profits which may result from the operation of a program containing a ControlWorks Consulting, LLC Module or any component thereof.

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