TAC ZBuilder®

Programming Tool for TAC Xenta 120

TAC ZBuilder is a programming tool for the zone controllers in the TAC Xenta 120 family.

The new TAC Zone concept currently includes a Fan Coil and a Heat Pump controller. These controllers are programmable and fit many types of zone applications.

TAC ZBuilder is an easy-to-use cognitive tool for use in configuring the new zone controllers. It is Windows® based and is fully integrated with TAC Vista® and LonMaker® for Windows and may also be used as a stand-alone tool.

The ZBuilder is easy to learn and increases the engineering and installation efficiency. All heating and cooling stages are represented in graphics for easy understanding of the control function, including all activation levels and hysteresis.

The heating and cooling sequences are easy to set up by just choosing the type of output from drop-down lists. The activation points are easily and intuitively adjusted.

With the revolutionary new Exception Mode technology, literally all kinds of abnormal situations can be taken care of. Up to eight Exception Modes can be prioritized and controlled, such as smoke and emergency situations.

TECHNICAL DATA

General
TAC ZBuilder is a Windows based graphic tool, which generates a configuration file. Using TAC Vista or LonMaker, this file is downloaded to a TAC Xenta 120 controller, containing the complete system program for a Fan Coil (FC) or a Heat Pump (HP) application.
ZBuilder can be run stand-alone for demonstration and preliminary configuration, and as a plug-in to TAC Vista or LonMaker for final configuration and download.

Interface
The user interface is intuitive with immediate graphic feedback. Only relevant features are open for input, all others are dimmed.
The tool has four main pages, one for each phase of the configuration task.
- The *Configuration page* lists the available Configuration Modules and the corresponding parameters.
- In the *Exception Modes page,* up to eight exceptions can be defined. These are special events, for example the required action when a window is opened or smoke is detected.
- The *I/O Setup page* shows how the inputs and outputs for the selected TAC Xenta 120 are used. These can be re-configured here. The page also lists the SNVTs that have to be bound.
- The *Overview page* is a graphic presentation of the application, with a list of the most important parameters and a print function for documentation purposes.

Tool Features
- ZBuilder supports 2- and 4-pipe Fan Coil and Heat Pump applications, the latter with both reversing and isolation valves.
- ZBuilder handles multistage heating and cooling devices.
- ZBuilder handles 1- to 3-speeds as well as analog fans.

- The heating and cooling devices can separately be connected to most types of actuators such as increase/decrease, on/off, multi-stage, PWM (Pulse Width Modulation), or analog.
- In ZBuilder the controller can be programmed to handle both CO_2 and RH (Relative Humidity) to ensure excellent indoor climate with minimum energy usage in combination with an OAD (Outdoor Air Damper).
- Up to eight Exception Modes can be defined to handle special events, like window opened, smoke detection, freeze protection, and so on.
- All inputs and outputs are freely configurable and can be allocated to any suitable hardware in- or output, or to LonWorks Standard Network Variables (SNVTs).
- The ZBuilder output can be saved as a configuration file or as a template, and be printed for installation and commissioning purposes.

Supported Targets
Contr Zone TAC Xenta 121-FC/24 0-073-0621
Contr Zone TAC Xenta 121-FC/230 0-073-0622
Contr Zone TAC Xenta 121-HP/24 0-073-0631
Contr Zone TAC Xenta 121-HP/230 0-073-0632

Operating Systems
. . . . Microsoft® Windows 2000
. . . . Microsoft® Windows XP Professional
. . . . .Microsoft® Windows 2003 Server

Distribution
TAC ZBuilder . . . . stand-alone, part no. 0-008-8035
. . . . . . included with TAC Vista or ToolPack 4.4.1 (or higher)
. . . . .as a download module from TAC extranet

Part Numbers
Engineering TAC Xenta 120 manual (EN). 0-004-7692
TAC Xenta 121-FC Application Data sheet 0-003-3057
TAC Xenta 121-HP Application Data sheet 0-003-3058

PROGRAMMING EXAMPLE

An example will illustrate how easy it is to use the TAC ZBuilder programming tool.

1. Select application: Fan Coil 4-pipe

- The Fan Coil controller can be used in both 2- and 4-pipe installations. The Heat Pump controller handles both reversing and isolation valves.
- Existing templates or other configuration files are used for fast and efficient programming.
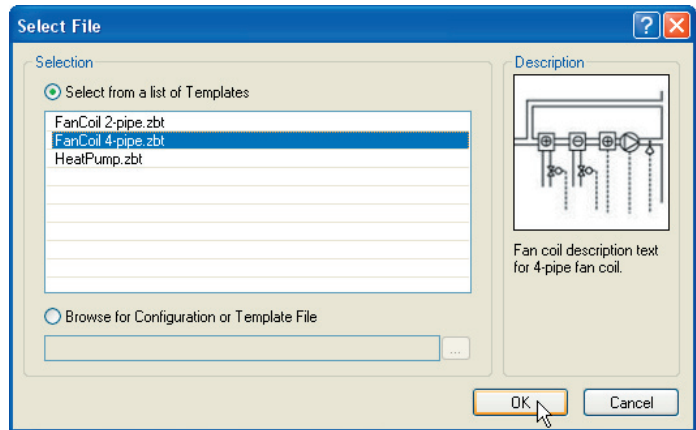

2. Specify the heating and/or cooling sequences.

- The controller handles up to three heating and cooling devices. For each device you can separately define when it shall be activated, and a common hysteresis guarantees smooth operation.
- The heating and cooling devices can separately be connected to any type of output to fit most types of actuators. The output can also be a standard LONWORKS network variable (SNVT).
- Symbols and graphics immediately show the result of the selected options.
- The freedom to connect the different heating and cooling stages to the best type of actuator increases quality and decreases cost.
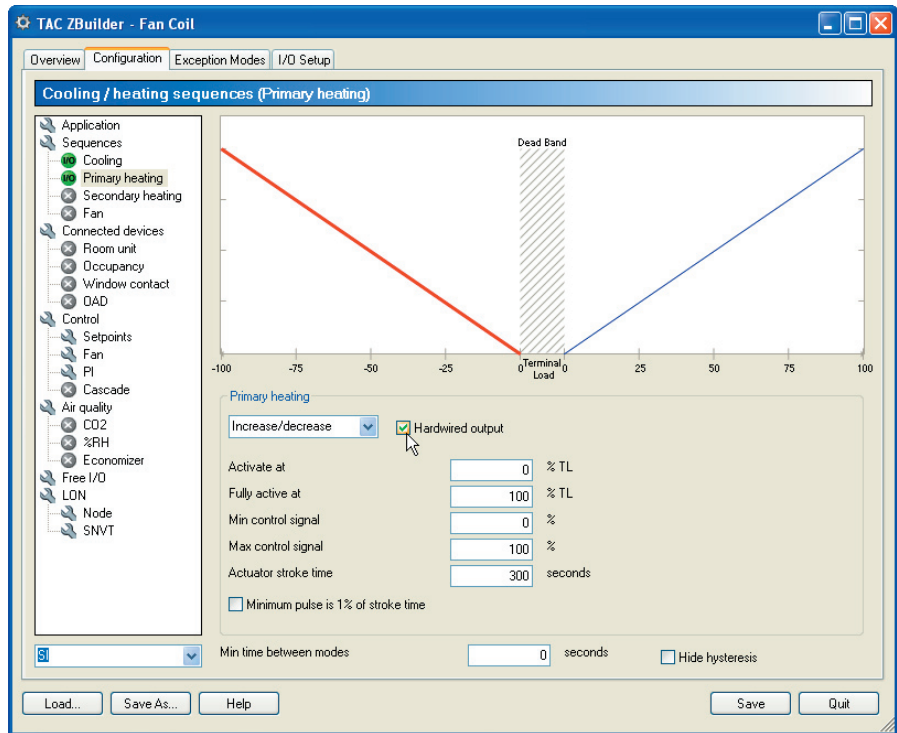
3. Determine type and operating characteristics of the fan.

- The tool handles 1-3 stage fans as well as analog fans. The advanced fan control program has functions for on/off delays, boosting, conditioning, fan feedback, and interlock among others.
- The configurable outputs fit any type of fan.
- The advanced fan control program ensures you will always get the right amount of air for high quality indoor climate.
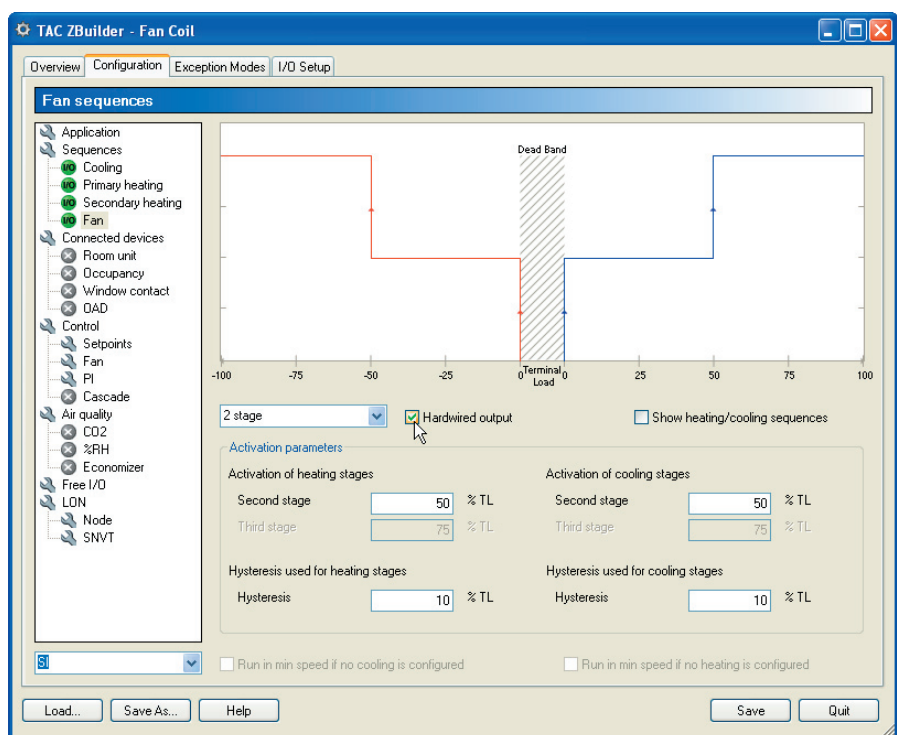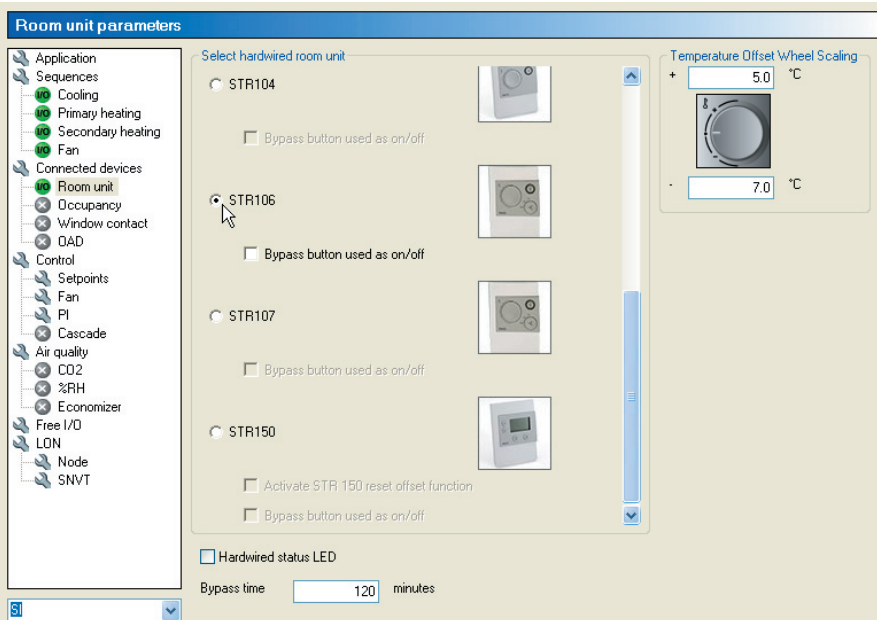
4. Add a room unit (space temperature sensor and setpoint control).

The controller handles
- the whole range of STR100-107 and STR150 sensors,
- the LON-based STR350/351,
- any 1.8 kohm TAC sensor,
- any other LON sensor.
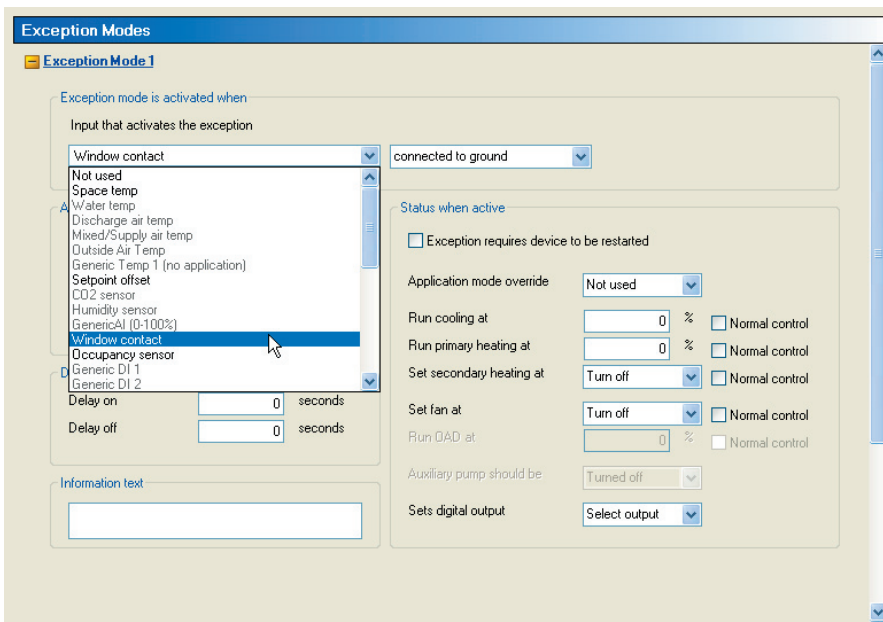
5. Define an Exception Mode, for example the required action when a contact signals an open window.

- With the new Exception Mode technology, literally all kinds of abnormal situations can be taken care of.
- Up to eight Exception Modes can be prioritized and controlled, such as smoke and emergency situations.
- The Exception Mode makes the new zone controller extremely versatile, allowing many new kinds of applications.
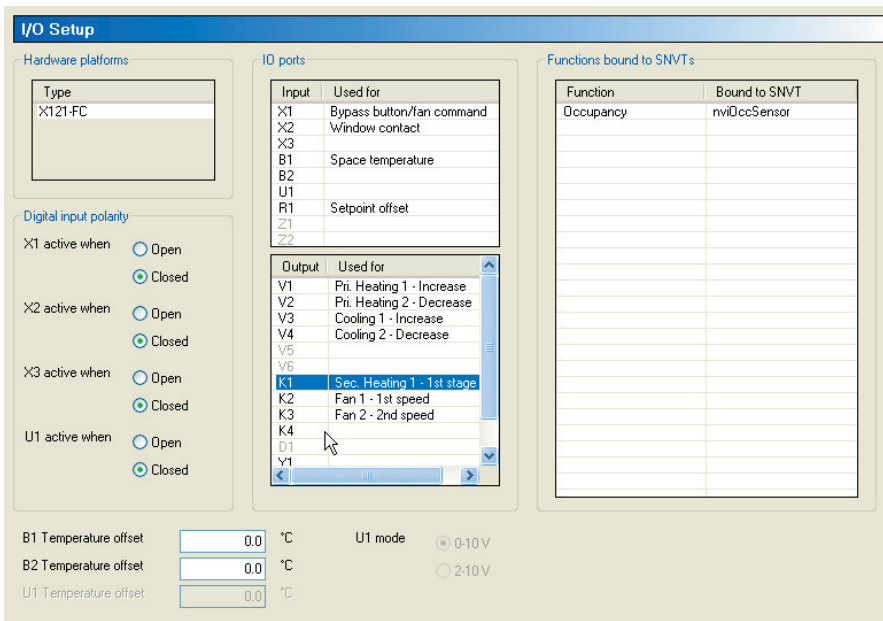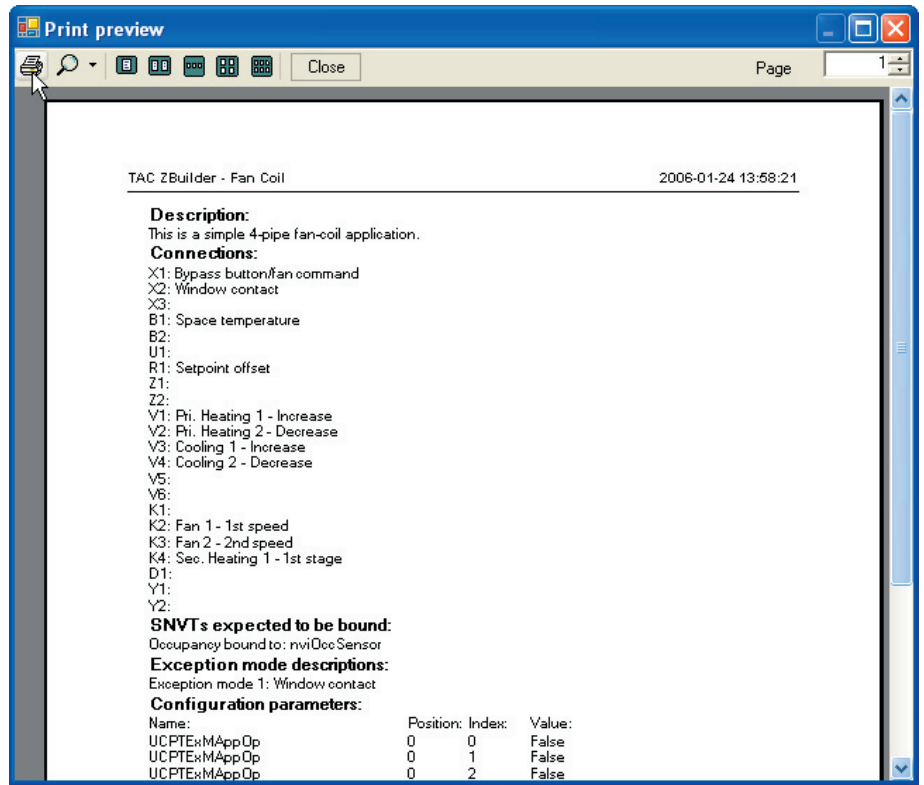

6. Check and, possibly, re-arrange by dragging-and-dropping the I/O configuration.
Get a list of SNVTs to be bound.

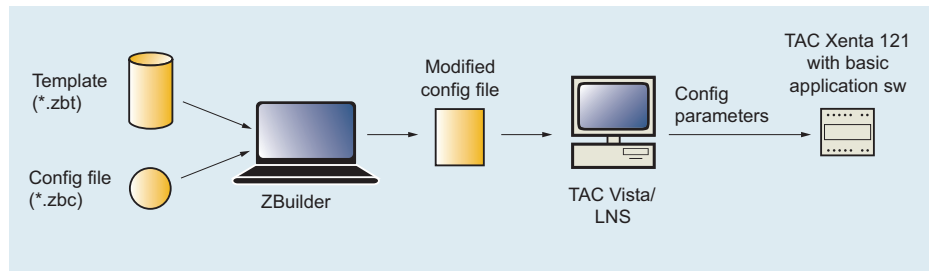- All inputs and outputs are freely configurable and can be allocated to any suitable hardware in- or output or to a LONWORKS Standard Network Variable (SNVT).
- Remaining in- and outputs can be freely used.
- The freedom to choose the type of in- and outputs makes the engineering process more simple and the cost for the project lower, due to the possibility to choose the best and most cost-effective actuators and sensors.

7. Finally, save the Configuration file for use with your network tool, and make a printout for commissioning, documentation, and so on.

- The Configuration file can immediately be used by both TAC Vista and LNS (LonWorks Network Services) when adding TAC Xenta 120 controllers to a network.
- The configuration parameters are downloaded to the device when it is commissioned in the network.
- The parameters are also saved in the respective network database.

Print preview Close Page 1

TAC ZBuilder - Fan Coil   2006-01-24 13:58:21

Description:
This is a simple 4-pipe fan-coil application.
Connections:
X1: Bypass button/fan command
X2: Window contact
X3:
B1: Space temperature
B2:
U1:
R1: Setpoint offset
Z1:
Z2:
V1: Pri. Heating 1 - Increase
V2: Pri. Heating 2 - Decrease
V3: Cooling 1 - Increase
V4: Cooling 2 - Decrease
V5:
V6:
K1:
K2: Fan 1 - 1st speed
K3: Fan 2 - 2nd speed
K4: Sec. Heating 1 - 1st stage
D1:
Y1:
Y2:
SNVTs expected to be bound:
Occupancy bound to: nviOcc Sensor
Exception mode descriptions:
Exception mode 1: Window contact
Configuration parameters:

Name:	Position:	Index:	Value:
UCPTExMAppOp	0	0	False
UCPTExMAppOp	0	1	False
UCPTExMAppOp	0	2	False

- The illustration is an overview of the programming procedure.
- Templates can be created for multiple download of identical applications.
- The flexibility of the TAC Zone controllers keeps the number of versions to a minimum, leading to greater cost efficiency.

Template (*.zbt) → ZBuilder
Config file (*.zbc) → ZBuilder → Modified config file → TAC Vista/LNS → Config parameters → TAC Xenta 121 with basic application sw

a company of Schneider Electric

LonMark 3.4

t.a.c ®