Description

T3-OEM is a low cost high performance Bacnet programmable controller. With an I/O configuration, it can be extended through external I/O modules to form a complete building automation solution.

There are five relays and four analog outputs as well as 8 universal inputs. These I/O can be configured using the free software. There are more than 300 settings with many options for each of the settings so its possible to configure these devices for most any application. Once the unit is configured, save the config file for copying to other controllers and backing up project settings.Options are available for occupancy sensor, zigbee, and humidity / enthalpy.

Supports Bacnet MSTP and Modbus RTU for the RS485 model.

Fully Programmable

Setup and programming are done on a PC not necessary to connect to live hardware as it is the case with many systems.when the program is ready for on-site testing, connect it to a live panel and download the T3000 software. Programming can be done remotely over the network and modem connections as well. The network system is very fiexible and economical for the installation.

T3000 SoftWare
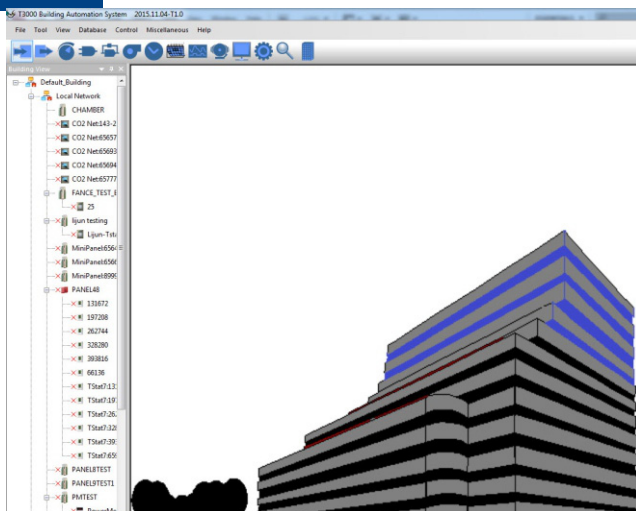
Highlights

- Software configure the I/O ranges with the free T3000 software or by writing to the registers with your own software
- Universal I/O can be configured for nearly any sensor, no jumper settings required
- Well documented register list for easy integration with other systems.
- 8 universal inputs for external temperature sensors, contacts, etc.
- 5 relay outputs, each rated at 12~24vac, 2 amps
- 4 analog outputs, 0-10V @ 100ma.
- 4 high-speed pulse counter
- Color LCD display with scroll bar.
- Each I/O as well as the RS485 connections have a separate screw terminal
- Clock with infinite life supercap battery backup.
- Supports Modbus RTU and Bacnet protocols simultaneously.

Specifications

Outputs	5 relay outputs 4 analog outputs 10V@100mA
8 Universal Inputs	10k therm, contacts, 4-20ma, 0-5V, 0-10V
Operating range	-30~70°C(-22~158°F) / 0 to 99% RH
Supply voltage	15~24VAC/DC ±20%, 50-60Hz
Power consumption	100mA at 15VDC
Relay contacts	5 relays, 2A @ 24VAC UL File No.: E169380
Plastic Housing	Flammability rating UL 94 file E56070
Enclosure rating	IP31
Protocols	Bacnet MSTP and Modbus RTU
Baudrate	9600, 19200, 38400, 57600, 115200
Temperature sensor	10K thermistor ±0.5°C
Setup Software	Free, no licensing, open source

Wiring Diagram
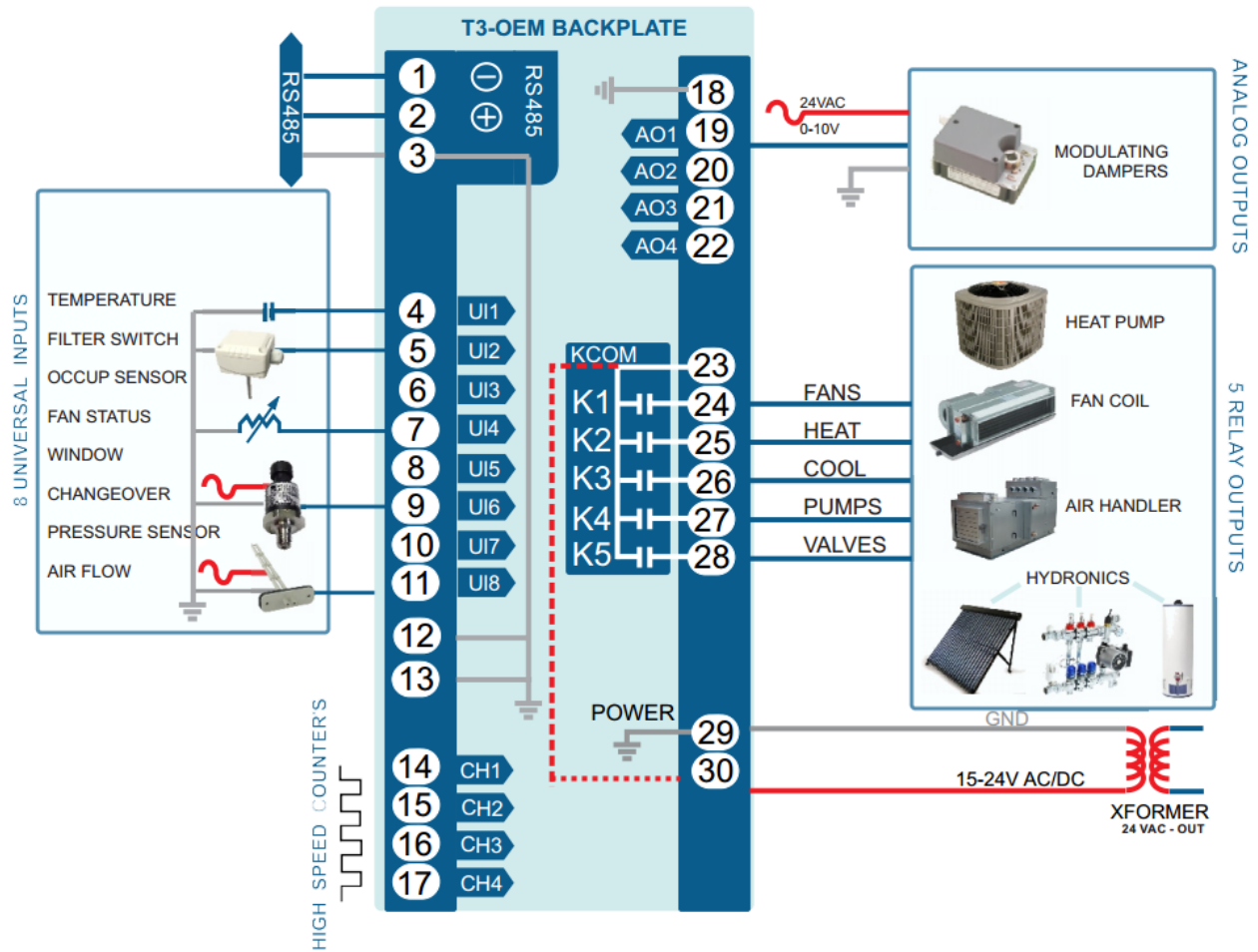
Dimensions
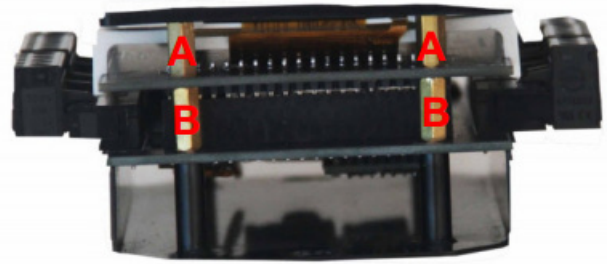
	Height
A	0.31in (8mm)
B	0.47in (12mm)

Software

8 universal inputs,4 analog outputs;5 relay outputs
Industry standard Bacnet & Modbus protocols
User screen displays
Day at home, work time, night at home, sleep, holiday
3 PID controllers

Bacnet Objects

Device	Object identifier;Object name;Object type;Vendor name;Vendor identifier; Model name;Firmware revision;Application software version; Protocol version;Protocol revision;Object list;Max apdu length accepted; Segmentation supported
Analog input	Object identifier;Object name;Description;Object type;Present value; Out of service;Units
Analog output	Object identifier;Object name;Description;Object type;Present value; Out of service;Units;Priority array
Analog value	Object identifier;Object name;Description;Object type;Present value; Out of service;Units;Priority array
Binary output	Object identifier;Object name;Description;Object type;Present value; Out of service;Units;Priority array;Polarity;Relinquish default;Active text; Inactive text

Programs

- Hot Key: Alt-P
- KEYWORD: PRG
- Usage:PRG1,PRG2,PRG3...How to show: when you use one of these items , the label of the item will be shown in the place where you use
- Control Basic is the programming language of the T3000. To access an individual program pressthe "Ins" key while high lighting that program. The programming language is discussed in Chapter 10
- Sample Control Basic work screen:

| | | Full Label | Status | Auto/Manual | Size | Run Status | Label |
| | | 1 | 2 | 3 | 4 | 5 | 6 |

Num	Full Label	Status	Auto/Manual	Size	Run Status	Label
☑ 1	AHU1 PROGRAM	ON	Auto	15	Normal	AHU1P
☐ 2	PRG2	OFF	Auto	50	Normal	AHU2P
☐ 3		OFF	Auto	0	Normal	AHU3P
☐ 4		OFF	Auto	0	Normal	BP
☐ 5		OFF	Auto	0	Normal	CHP
☐ 6		OFF	Auto	0	Normal	
☐ 7		OFF	Auto	0	Normal	
☐ 8		OFF	Auto	0	Normal	
☐ 9		ON	Auto	0	Normal	
☐ 10		ON	Auto	0	Normal	
☐ 11		ON	Auto	0	Normal	
☐ 12		ON	Auto	0	Normal	
☐ 13		ON	Auto	0	Normal	
☐ 14		ON	Auto	0	Normal	
☐ 15		ON	Auto	0	Normal	
☐ 16	COUNT	ON	Auto	36	Normal	

Control Basic set-up fields:

Full Label

1 Full Label

A 20 character descriptor of

2 Status

Status

Indicates whether the program is running or not (ON/OFF).

3 Auto/Manual

Auto/Manual

In "Auto" the running of the program can be controlled by either the program timer orano-ther program. In "Manual" the program can be stopped and started by the operator by togglingthe status field.

4 Size

Size

The length in bytes of the program, maxi mum size is 2500 bytes.
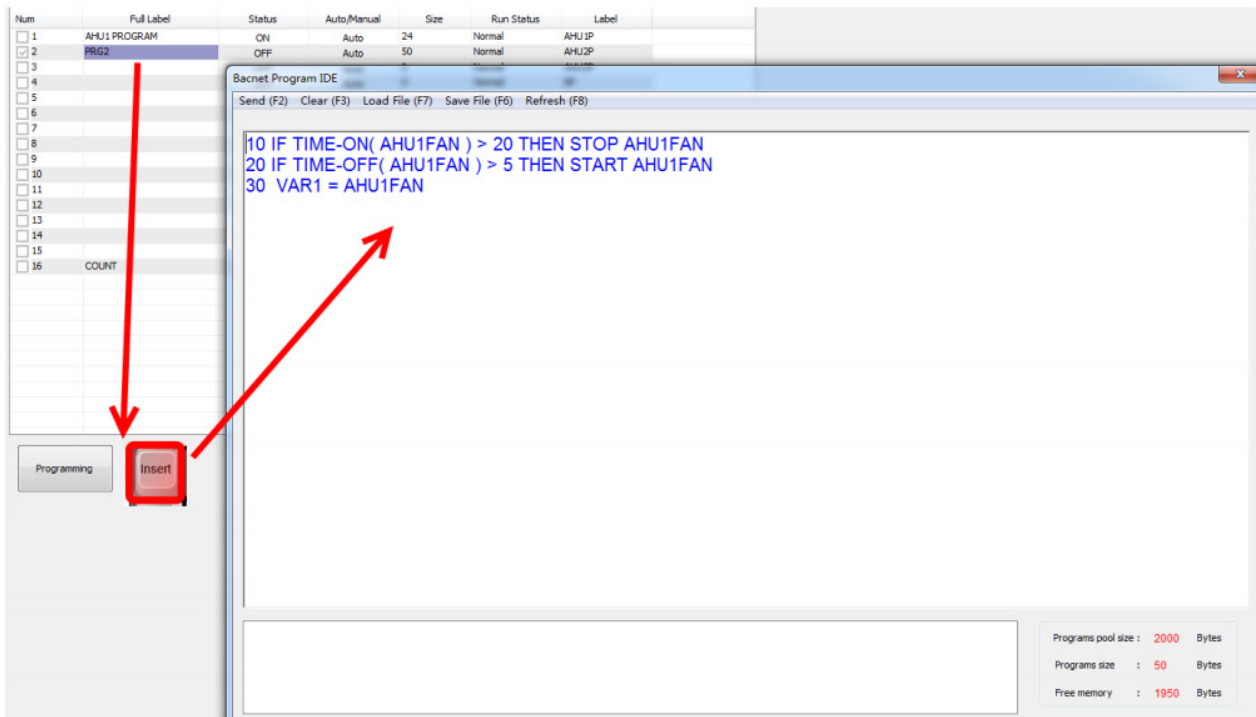
5 Run Status

Run Status

The time between each running of the program (mins: secs).

6 Label

Label

An 8 character descriptor of the point.See Chapter 10 for more information on how to program Control Basic and use the Control BasicEditor

Num	Full Label	Status	Auto/Manual	Size	Run Status	Label
1	AHU1 PROGRAM	ON	Auto	24	Normal	AHU1P
2	PRG2	OFF	Auto	50	Normal	AHU2P
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16	COUNT					

Bacnet Program IDE

Send (F2) Clear (F3) Load File (F7) Save File (F6) Refresh (F8)

```
10 IF TIME-ON( AHU1FAN ) > 20 THEN STOP AHU1FAN
20 IF TIME-OFF( AHU1FAN ) > 5 THEN START AHU1FAN
30  VAR1 = AHU1FAN
```

Programming   Insert

Programs pool size :	2000	Bytes
Programs size :	50	Bytes
Free memory :	1950	Bytes

Register List

Address	R/W	Length	Description
0~3	R	4	Reserved for serial numblert
4~5	R	2	firmware Version Number
6	R/W	1	Modbus device address
7	R	1	Prodouct model
8	R	1	Hardware Version Number
9	R	1	PIC rev
12	R	1	UART0 Baudrate. 5 - 9600 , 6 - 19200
14	R	1	ISP Version
33	N	1	test cmd, write 77 - reboot, 100 - set default paramer, 111 - erase prg, 150 - clear tstat db
34	R	1	board type, big or small. 1 - big , 2 - samll,3-tiny,4-vav
35	R	1	instance number
36	R	1	station number
39	R/W	1	EN clear tstat db
43	R/W	1	EN DYNDNS ,// 0 - no 1 - disable 2 - enable
44	R/W	1	DYNDNS provider, // 0- www.3322.org 1-www.dyndns.com 2 - www.no-ip.com
45	R/W	1	dyndns update timer
46	R/W	1	NETWORK: MSB, MSB-1
47	R/W	1	MSTP NETWORK: MSB, MSB-1
51	R	1	TOP hardware
52	R	1	c8051f023 firmware rev
53	R	1	sm5964 firmware rev
...			

T3000 Operation

1.Connect T3-OEM to PC by RS485, start T3000 software
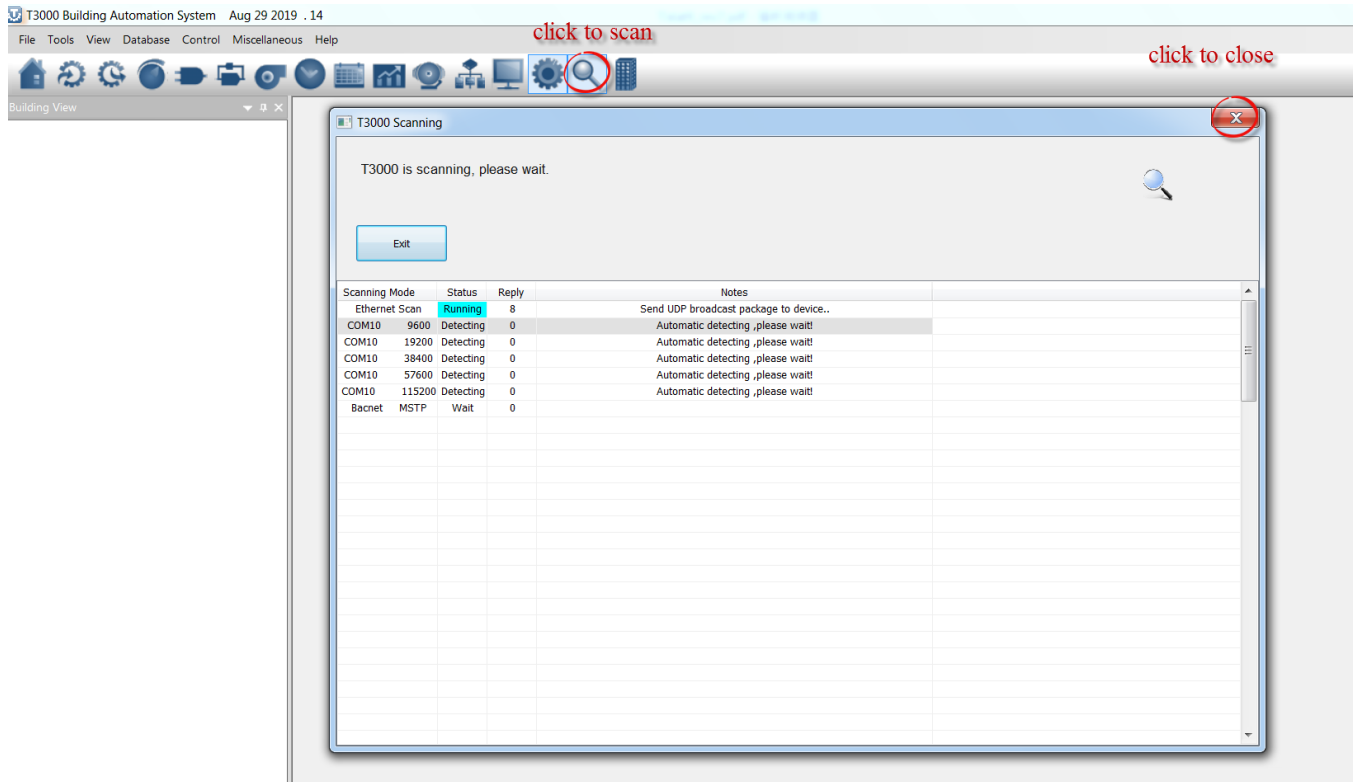
2. Click the button 🔍 to scan, the following view will appear and close it as the picture indicates.When discussing T3-OEM,close the view.