THM Series HMI

The introduction of BANNER ENGINEERING

BANNER ENGINEERING is a global leading sensing detecting and automation solution supplier, who has more than 22,000 types of products and the most complete product lines, including industrial controllers (PLC & HMI), photoelectric sensors, measuring and detecting sensors, industrial wireless network products, machine vision , industrial safety products, industrial intelligent indicators, rotary encoders and other automation products that can meet different control & detection demands. In the past 4 decades of development, Banner has been taking innovation as the driving force of application and R&D of products.In terms of either factory automation or process automation, Banner can provide leading and reliable control & detection solutions.

The introduction of THM series HMI

THM has excellent performance, elegant outlook and complete product series. It adopts advanced embedded technology, efficient real-time operation system, and simple used operation software. Besides basic functions of monitor, operation and storing data, it also supports major brands of controllers, PLC, inverter and other equipment communication. In various fields of Factory Automation and Process Automation, it has widely application.

THM series HMI has eight inches, which are 3.5".4.3".5.6".7".8".10.4".12.1",15".

The main stream adopts 60000 colors TFT displays, from the basic type only with the serial port,to the type integrating various serial ports, various USB interfaces, Ethernet interface, audio interface, and SD card slot of Multi function type.It has various types to realize different users under needs of different application scenes.

Friendly software

BAMS software is integrated the advantages of the major brand globally, which is easy to operate and has abundant function.The well-designed windows and the smooth animation willmake you satisfied.

Rapid Response

THM adopts advanced embedded technology, low-power 32-bit RISC CPU clip, and advanced 2D graphics accelerator. High efficient built-in real-time operation system, lights when it powers on instantaneously, communicating with the controller rapidly. THM will finish its communication instantaneously and would not delay when it communicates with IPC & PLC.

Strong Communication

Integrating various serial ports (at most 3 pcs),supporting three sorts of communication styles, which are RS232/RS485/RS422, and able to communicate with controllers of different communication protocol simultaneously.

Integrated Ethernet interface: Realizing the remote monitor on HMI by Ethernet, and the data exchange between HMI and controller, each PC, and each HMI.

Integrated USB interface: Uploding and downloading program, and storing data by USB interface.Also able to connect with other equipments of USB interface, such as Mouse, keyboard and printer. Flexible expansion & wealth of function.

Cool Vision Effect

Adopting 65536 colors,True color TFT LCD screen, which is bright and colourful. It supports picture formats like BMP, JPG and GIF for individualized demonstration.

High reliability

All series of products have certification of CE, etc, which are consistent with international standards. They have advanced anti jamming performance to the environment like electromagnetic wave, static electricity, humidity, and high and low temperature. Moreover, they have various protection functions, like power reverse connection, short circuit protection, surge protection, and communication protection.

Strong | Stable | Reliable | Safe

Overview of THM hardware

Audio interface (partial models)

For playing language file, and outputting language message

Power interface

DC20   28V

Serial port

Supporting
RS232/422/485

Ethernet interface

Realizing the remote monitor to HMI by Ethernet, and the data exchange between HMI and controller, each PC, and each HMI.

USB interface

Uploading   downloading program, and by USB interface. Also able to equipments of USB

SD card

Able to insert SD card, for program upload & download and data storage.

Overview of BAMS software

- **BAMS software is simple to learn & use.**

- **Large volume of the gallery**

  * Suporting the format of BMP, JPG, and and GIF; Supporting full color display, and meanwhile, the software integrates rich gallery for random option .

  * The software has over 4000 graphics originals for users' making images of various effect.

- **Multi languages transformation**

  Supporting all fonts of Windows system; Adopting Unicode system, and supporting multi languages online transformation, which at most reaches to 10 sorts of languages.
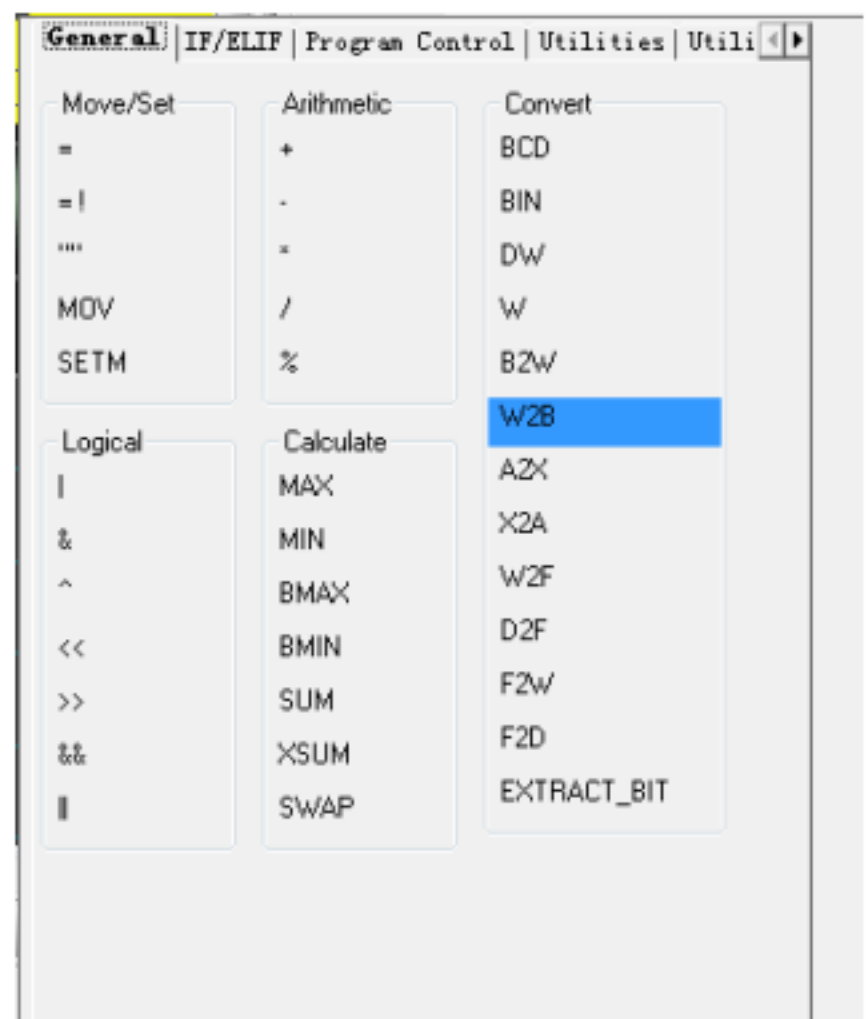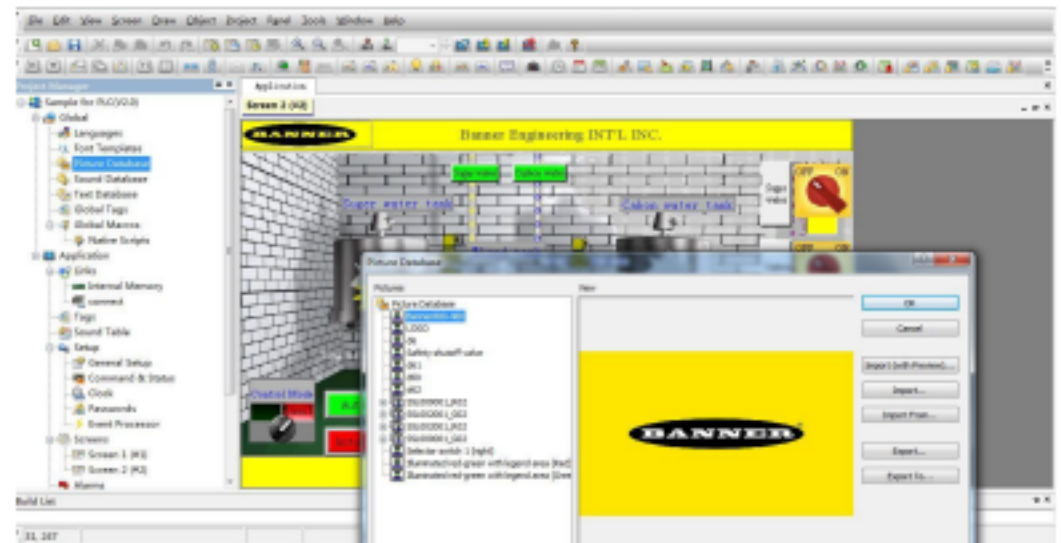
- **Simulation function**

  In BAMS software, simulating HMI & PLC could be operated by online or offline patterns, to simulate debugging of image and operation.

  * Offline simulation. Without HMI & PLC, directly simulating the computer as one HMI & PLC, for users' conveniently learning software and design the image.

  * Online simulation, directly regarding the computer as one HMI & PLC to communicate and exchange data. The effect is the same as online operation of HMI & PLC.
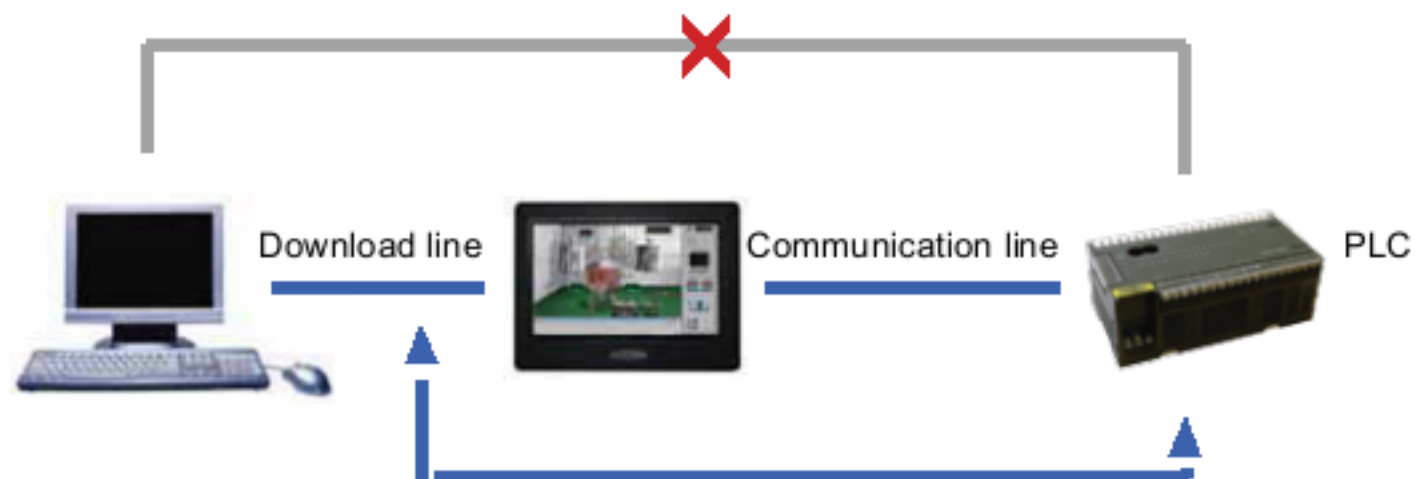
- **Strong MACRO Editor**

  Supporting MACRO script. The MACRO The MACRO instruction is rich for users' freely writing program to realize the necessary functions.

  * Various MACRO instruction for flexible use
  * MACRO instruction Pattern of Various controlling methods for options

  * The program can be inputted various MACRO instruction

• Transparent communication

PC communicates through THM & PLC, which makes the debugging of PLC more convenient. When the communication style is RS422/485, the specialized PLC communication cable can be replaced. PC can directly online amend and monitor PLC system by THM without the specialized PLC communication cable.

Download line　　Communication line　　PLC

• Strong opening

THM supports various communication interfaces for convenient flexible networkings as follows
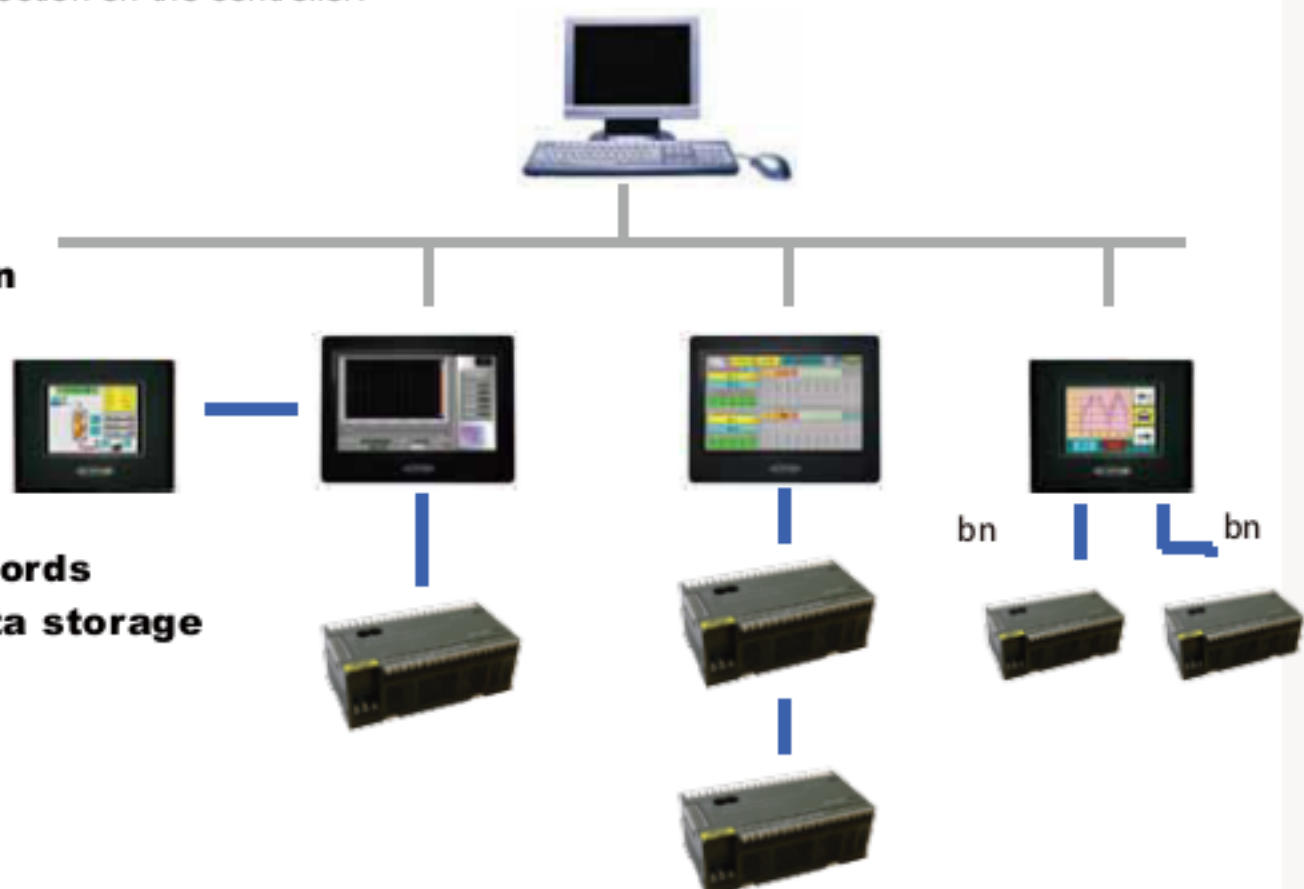
1. One HMI connecting one PLC (1:1) or the two serials of one HMI individually connecting two different controllers (2:2)
2. One serial (RS485) of one HMI connecting various controllers(1:n)
3. Various HMI (RS485) connecting one controller (n:1)
4. One HMI connecting various controllers by Ethernet.
5. One HMI connecting PC by Ethernet; Connecting the controller by serial port , which makes PC the data collection on the controller.
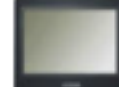
• Supporting 8 level code protection

• Rich alarm function

• Supporting recipe function of various zones & groups.

• Historical data records displaying, and data storage of various zones

bn　　bn

Model	THM 035B	THM 043A	THM 043C3	THM 056A	THM 070S	THM 070A	THM 070AE	THM 070C3
Specification — Size	3.5"	4.3"	4.3"	5.6"	7.0"	7.0"	7.0"	7.0"
Display	256 color TFT, LED backlight	65536 color TFT, LED backlight						
Resolution	320×240	460×272	460×272	320×234	600×460	600×460	600×460	600×460
Lightness(cd/m2)	300	400	400	250	350	300	300	400
Touch panel	4-wire resistance screen							
CPU	32-bit RISC	32-bit RISC	RISC ARM 9 32Mhz	32-bit RISC	RISC ARM 9 32Mhz	32-bit RISC	32-bit RISC	RISC ARM 9 32Mhz
Memory(SDRAM)	512KB	32MB	64MB	32MB	64MB	64MB	64MB	64MB
Battery backup memory	None	128KB (1MB optional)	128KB	128KB (1MB optional)	128KB (1MB optional)	128KB (1MB optional)	128KB (1MB optional)	128KB (1MB optional)
Flash Memory	2MB	6MB	64MB	6MB	20MB	6MB	128+6MB	64MB
SD card	None	None	None	None	None	None	At most 16GB	None
Communication interface — USB	None	1 Host + 1 Slave	1 Host + 1 Slave	1 Host + 1 Slave	1 Host + 1 Slave	1 Host + 1 Slave	1 Host + 1 Slave	1 Host + 1 Slave
Serial	COM 1^RS232 COM 2^RS232/485	COM 1^RS232/422/485 COM 2^RS232/485 COM 3^RS232	COM 1^RS232/485 1mr ha1s COM 2 rerm COM 3^RS485/485 1mr ha1s	COM 1^RS232/422/485 COM 2^RS232/485 COM 3^RS485	COM 1^RS232 COM 2^RS232/485 COM 3^RS485	COM 1^RS232/422/485 COM 2^RS232/485 COM 3^RS232	COM 1^RS232/422/485 COM 2^RS232/485 COM 3^RS232	COM 1^RS232 COM 2^RS232/485 COM 3^RS485
Ethernet	None	None	None	None	None	None	Yes	None
Electricity characteristics — Watt	6h	13h	15h	13h	3h	15h	15h	15h
Power supply	DC24V^26W	DC24V^26W	12~24VDC±10%(non-isolated)	DC24V^26W	12~24VDC±10%(non-isolated)	DC24V^26W	DC24V^26V	12~24VDC±10%(non-isolated)
Conditions — Operation temperature	0^~50^	0^~50^	-10^~50^	0^~50^	-10^~50^	0^~50^	0^~50^	-10^~50^
Operation humidity	10%~90% RH, No condensation							
Vibration resistance	10Hz^55Hz X/Y/Z direction 1G/30 minutes							
Certifications — IP Class	IP65(Front panel)	IP65(Front panel)	IP54(Front panel)	IP65(Front panel)	IP65(Front panel)	IP65(Front panel)	IP65(Front panel)	IP54(Front panel)
CE	EN 55022^ EN61000-4-2^ EN61000-6-4^ EN61000-4-6							
Physical specification — Dimensions (mm)	130.0×102.2×39.0	130.0×102.2×39.0	129×102×33	166.0×143.2×40.0	203.5×149.5×31	166.0×143.2×40.0	166.0×143.2×40.0	203.5×149.5×35
Cutout dimensions (mm)	116.8×92.5	116.8×92.5	116.8×92.5	175×132.5	191.5×137.5	175×132.5	175×132.5	191.5×137.5
Weight	0.2Kg	0.3Kg	0.3Kg	0.5Kg	0.6Kg	0.6Kg	0.6Kg	0.6Kg

THM 070C3E	THM 080A	THM 080AE	THM 101S	THM 101C3	THM 101C3E	THM 104A	THM 104AE	THM 121C3E	THM 150C3E
7.0"	8"	8"	10.2"	10.2"	10.2"	10.4"	10.4"	12.1"	15"
65536 colors TFT, LED backlight									
800×480	600×600	600×600	1024×600	1024×768	1024×768	600×600	600×600	1024×768	1024×768
400	300	300	250	350	350	400	400	300	350
4-wire resistance screen							5-wire resistance screen		
RTC ARM 9 32Hz	32-bit RTC	32-bit RTC	RTC ARM 9 32Hz	RTC ARM 9 32Hz	RTC ARM 9 32Hz	32-bit RTC	32-bit RTC	RTC ARM 9 32Hz	RTC ARM 9 32Hz
64MB	64MB	64MB	64M	64MB	64MB	64MB	64MB	64MB	64MB
128KB (1MB optional)	128KB (1MB optional)	128KB (1MB optional)	128KB (1MB optional)	128KB (1MB optional)	128KB (1MB optional)	128KB (1MB optional)	128KB (1MB optional)	128KB (1MB optional)	128KB (1MB optional)
64MB	6MB	128+6MB	20MB	64MB	64MB	6MB	128+6MB	64MB	64MB
None	None	At most 16GB	None	None	None	None	At most 16GB	None	None
1 Master, 1 Slave	1 Master, 1 Slave	1 Master, 1 Slave	1 Master, 1 Slave	1 Master, 1 Slave	1 Master, 1 Slave	1 Master, 1 Slave	1 Master, 1 Slave	1 Master, 1 Slave	1 Master, 1 Slave
COM 1^ RS232 COM 2^ RS422/485 COM 3^ RS485	COM 1^ RS232/485 COM 2^ RS232/485 COM 3^ RS232	COM 1^ RS232/422/485 COM 2^ RS232/485 COM 3^ RS232	COM 1^ RS232 COM 2^ RS422/485 COM 3^ RS485	COM 1^ RS232 COM 2^ RS422/485 COM 3^ RS485	COM 1^ RS232 COM 2^ RS422/485 COM 3^ RS232	COM 1^ RS232/422/485 COM 2^ RS232/485 COM 3^ RS232	COM 1^ RS232/422/485 COM 2^ RS232/485 COM 3^ RS232	COM 1^ RS232 COM 2^ RS422/485 COM 3^ RS485; COM 4^ RS485	COM 1^ RS232 COM 2^ RS422/485 COM 3^ RS485; COM 4^ RS485 COM 5^ RS485
Yes	None	Yes	None	None	Yes	None	Yes	Yes	Yes
20h	20h	20h	15h	15h	20h	20h	20h	20h	20h
12~24VDC±10% (Isolated)	DC20V^ 26V	DC20V^ 26V	12~24VDC±10% (non-Isolated)	12~24VDC±10% (non-Isolated)	12~24VDC±10% (Isolated)	DC20V^ 26V	DC20V^ 26V	24VDC±10% (Isolated)	24VDC±10% (Isolated)
-10^ ~60^	0^^ 50^	0^^ 50^	-10^ ~50^	-10^ ~50^	-10^ ~60^	0^^ 50^	0^^ 50^	-10^ ~60^	-10^ ~60^
10%~90% RH, No condensation									
10Hz^ 55Hz (X Y Z direction 1G/30 minutes)									
IP65 (Front panel)	IP65 (Front panel)	IP65 (Front panel)	IP65 (Front panel)	IP65 (Front panel)	IP65 (Front panel)	IP65 (Front panel)	IP65 (Front panel)	IP65 (Front panel)	IP65 (Front panel)
EN55022^ EN61000-4-2^ EN61000-6^ ^ EN61000-4-6									
200.5×146.5×31	231.6×174.6×42.5	231.6×174.6×42.5	270.6×212.6×31.4	270.6×212.6×40.5	270.6×212.6×42.5	270.1×212.1×42.5	270.1×212.1×42.5	339.4×269×56.2	399.1×297.6×57.5
191×131.5	220.5×161.5	220.5×161.5	259.5×201.5	259.5×201.5	259.5×201.5	259.0×201.0	259.0×201.0	302×226	365×261.0
0.6kg	0.90kg	0.90kg	1.2kg	1.2kg	1.2kg	1.2kg	1.2kg	2.2kg	2.6kg

Model	Description
THM 035B	3.5" TFT LCD* 256 colors* LED backlight* 320x240 resolution* No USB interface & Ethernet
THM 043A	4.3" TFT LCD* 16:9* 65536 colors* LED backlight* 480x272 resolution* 2 USB interfaces * No Ethernet
THM 043C3	4.3" TFT LCD* 16:9* 65536 colors.LED backlight.480x272 resolution.2 USB interfaces* No Ethernet
THM 056A	5.6" TFT LCD ,65536 colors* LED backlight* 320x234 resolution* 2 USB interfaces* No Ethernet
THM 070S	7" TFT LCD* 16:9* 65536 colors* LED backlight* 800x480 resolution* 2 USB interfaces * No Ethernet* Only 30 pages are supported
THM 070A	7" TFT LCD* 16:9* 65536 colors* LED backlight* 800x480 resolution* 2 USB interfaces* No Ethernet.
THM 070AE	7" TFT LCD* 16:9* 65536 colors* LED backlight* 800x480 resolution* 2 USB interfaces * With Ethernet* Additional 128M of storage space
THM 070C3	7" TFT LCD* 16:9.65536 colors* LED backlight* 800x480 resolution* 2 USB interfaces * No Ethernet
THM 070C3E	7" TFT LCD* 16:9.65536 colors* LED backlight* 800x480 resolution* 2 USB interfaces * With Ethernet
THM 080A	8" TFT LCD* 65536 colors* LED backlight* 800*600 resolution* 2 USB interfaces* No Ethernet
THM 080AE	8" TFT LCD ,65536 colors,LED backlight* 800x600 resolution,2 USB interfaces* With Ethernet* Additional 128M of storage space
THM 101S	10.2"TFT* 16:9* 65536 colors* LED backlight* 1024*600 resolution* 2 USB interfaces* No Ethernet* Only 30 pages are supported
THM 101C3	10.2"TFT* 16:9* 65536 colors* LED backlight* 1024*768 resolution* 2 USB interfaces* No Ethernet
THM 101C3E	10.2"TFT* 16:9* 65536 colors* LED backlight* 1024*768 resolution* 2 USB interfaces* With Ethernet
THM 104A	10.4"TFT* 65536 colors* LED backlight* 800*600 resolution* 2 USB interfaces* No Ethernet.
THM 104AE	10.4"TFT* 65536 colors* LED backlight* 800*600 resolution* 2 USB interfaces* With Ethernet* Additional 128M of storage space.
THM 121C3E	12.1"TFT* 16:9* 65536 colors* LED backlight* 1024*768 resolution* 2 USB interfaces* With Ethernet
THM 150C3E	15"TFT* 65536 colors* LED backlight* 1024*768 resolution* 2 USB interfaces* With Ethernet

BAMS1-Datawatch SCADA Software

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