

Energy-saving Building Automation Control Products





Headquarters

About *Greenwell*

Beijing Greenwell Control Technology Co. Ltd, a wholly-owned subsidiary of GST Holdings Limited, which is listed on the main board of HKSE, is specialize in R&D, production and sales of industrial fire products, energy-saving building automation control products.

With a collection of high-class certifications for design and installation solutions. Make Greenwell your idea partner for all your low current and life safety requirements.

Production Base



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Energy Efficient

HVAC Thermostatic Control System

Greenwell is pleased to provide the latest range of intelligent thermostats, efficiently controlling the temperature you want, when you want and where you want designed to provide a comfortable and energy efficient environment. Ideal for Residential, Commercial, Retail, Hotel, Health Care and Educational facilities.

Standalone Intelligent Digital Thermostat

Features

- Setting cooling, heating and ventilating modes
- Setting required room temperature
- Displaying controlling actual room temperature
- Manual/auto control of 3 speed fan
- Temperature calibration
- Freezing protection
- Keypad lock
- Hi tech digital design for enhanced stable performance
- Digital design and stable performance
- Microscopic controlled for the greater energy saving efficiency

Technical Specifications

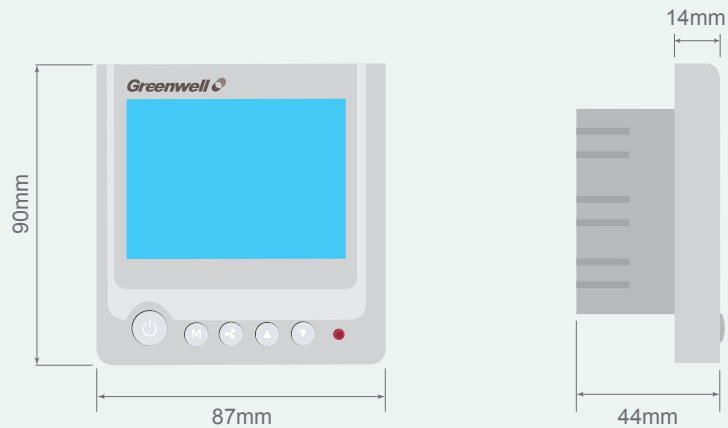
Operation Voltage:	AC220V \pm 10%, 50/60Hz
Self Power Consumption:	< 2W
Rating Capacity:	< 2A for fan load, 2A for valve
Setpoint Range:	5°C~35°C
Sensor:	Thermistor
Mounting Hole Distance:	60mm (standard), installed on 86x86mm junction box
Wiring:	Box screw terminal connection, 1mm ² single copper cable is recommended
Shell Material:	Flame retardant PC ABS
Display Mode:	LCD

Products List



TC5901 Series

- Wide LCD display with backlighting shows the room and set time and temperature even in the dark
- The LCD is divided into areas for better display
- Timer function automatically turning on/off the thermostat at set time
- Permanent memory retention
- Safe and reliable voltage drop by transformer
- Direct installation on 86 size box

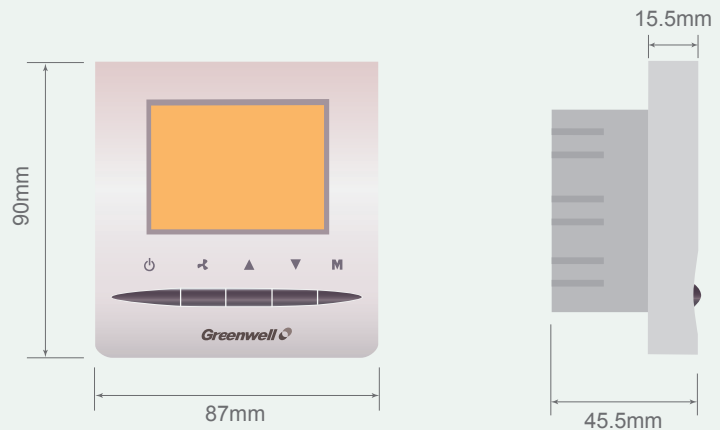


Part No.	Description
TC5901	Not to control motorized valve.
TC5901-B	Not to control motorized valve. With blue backlight.
TC5901V2	Controls a two-wire valve.
TC5901V2-B	Controls a two-wire valve. With blue backlight.
TC5901TV2	Controls a three-wire valve.
TC5901TV2-B	Controls a three-wire valve. With blue backlight.
TC5901V4	Controls 2 two-wire valves.
TC5901V4-B	Controls 2 two-wire valves. With blue backlight.



TC5902 Series

- Stylish contemporary design
- Clearer LCD display with (OPT) amber backlight
- Digital electronic processor controlled thermostat (Mercury free)
- Auto/manual control of 3 speed fan
- 2 or 4 pipe valve control options
- Suitable for hotel, office and residential buildings
- Divided into areas for better visual display
- Big LCD display
- Temperature displays can be calibrated

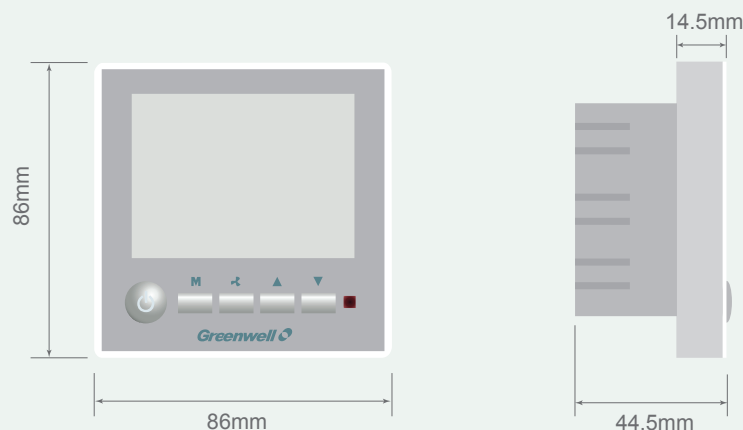


Part No.	Description
TC5902	Not to control motorized valve.
TC5902-B	Not to control motorized valve. With amber backlight.
TC5902V2	For two-pipe system. Controls a two-wire valve.
TC5902V2-B	For two-pipe system. Controls a two-wire valve. With amber backlight.
TC5902TV2	For two-pipe system. Controls a three-wire valve.
TC5902TV2-B	For two-pipe system. Controls a three-wire valve. With amber backlight.
TC5902V4	For four-pipe system. Controls 2 two-wire valves.
TC5902V4-B	For four-pipe system. Controls 2 two-wire valves. With amber backlight.



TC6012 Series

- Acrylic front panel, customized colours for specific room style
- Precise temperature control of $\pm 0.5^{\circ}\text{C}$ tolerance
- Additional sensor port for additional temperature control
- Programmable temperature control involving multiple days and periods
- The fan status can be set in field to be controlled or not
- Safe and reliable voltage drop by transformer
- Direct installation on 86 size box



Part No.	Description
TC6012	Not to control motorized valve.
TC6012-B	Not to control motorized valve. With white backlight.
TC6012V2	For two-pipe system. Controls a two-wire valve.
TC6012V2-B	For two-pipe system. Controls a two-wire valve. With white backlight.
TC6012TV2	For two-pipe system. Controls a three-wire valve.
TC6012TV2-B	For two-pipe system. Controls a three-wire valve. With white backlight.
TC6012V4	For four-pipe system. Controls 2 two-wire valves.
TC6012V4-B	For four-pipe system. Controls 2 two-wire valves. With white backlight.

HW-GX Series Motorized Valve

Features

- 2 parts assembly for ease of maintenance
- Forged brass body
- Stainless steel base, aluminum enclosure
- Driven by hermetic unidirectional synchronous motor, stainless steel spring reset
- Low power consumption and noise
- Connecting driver and valve body with buckles, ensuring an easy and convenient installation and disassembly

Technical Specifications

Power Voltage:	AC220V ± 10%, 50Hz
Power Consumption:	< 7W
Nominal Pressure:	1.6Mpa
Response Time:	Start < 10s, Reset < 6s
Operation Environment:	5°C ~ 60°C, 10% ~ 95% RH, non-condensing
Water Flow Temperature:	5°C ~ 90°C

Products List



Part No.	Caliber	Type	Kv(Cv)	Differential pressure to close(MPa)
GST-G2-1/2-S2	1/2" (15mm)	Separated Two-way Valve and actuator	2.2 (2.5)	0.20
GST-G2-3/4-S2	3/4" (20mm)	Separated Two-way Valve and actuator	3.0 (3.5)	0.18
GST-G2-1-S2	1" (25mm)	Separated Two-way Valve and actuator	6.9 (8.0)	0.15

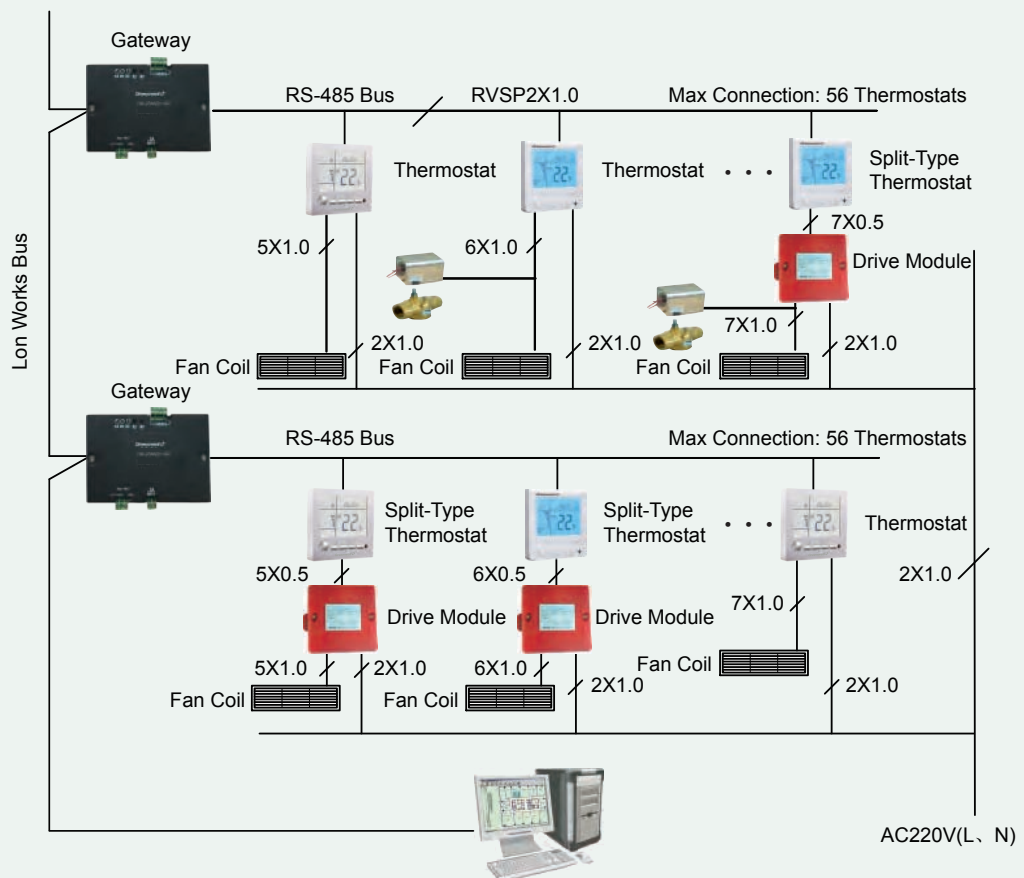


Part No.	Caliber	Type	Kv(Cv)	Differential pressure to close(MPa)
GST-G3-1/2-S2	1/2" (15mm)	Separated Three-way Valve and actuator	2.6 (3.0)	0.20
GST-G3-3/4-S2	3/4" (20mm)	Separated Three-way Valve and actuator	3.4 (4.0)	0.18
GST-G3-1-S2	1" (25mm)	Separated Three-way Valve and actuator	6.9 (8.0)	0.15

Energy-saving system of air-conditioning can be used to monitor and adjust the temperature in the different areas of a building. Energy is effectively saved to the maximal degree by timing start / stop of the fan coil in field or setup of the temperature, this can also be achieved by central control; which controls the state of the fan coil and sets up the temperature in the room.

The system consist of: host computer, network control software, network adapter, thermostat gateway, networkable thermostat, motorized valves.

System Diagram



Networkable Intelligent Digital Thermostat

Features

- Setting room temperature
- Displaying room temperature
- Manual/auto control of 3 speed fan
- Display the actual fan speed
- Setting cooling, heating and ventilating modes
- The fan status can be set in field to be locally controlled or locked
- Displaying running time of fan coil unit for local billing accountability
- Time clock display
- Sleep mode
- Programmable time zones
- Temperature calibration
- Freezing protection
- Keypad lock
- Standard RS-485 interface

Note: Split-type thermostats match with HW-BA5971V series drive module.

Technical Specifications

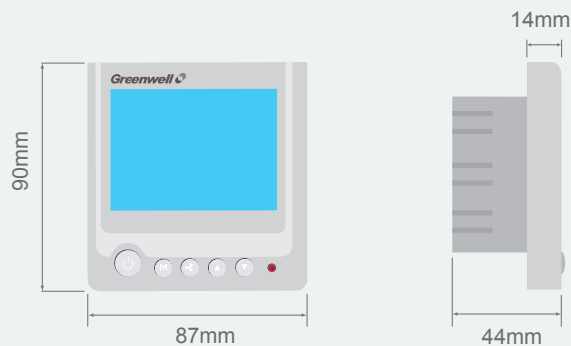
Operation Voltage:	AC220V \pm 10%, 50/60Hz
Self Power Consumption:	< 2W
Rating Capacity:	< 2A for fan load, 2A for valve
Setpoint Range:	5°C~35°C
Sensor:	Thermistor
Mounting Hole Distance:	60mm (standard), installed on 86x86mm junction box
Wiring:	Fastened by screws, 1mm ² single copper cable is recommended
Shell Material:	Flame retardant PC ABS
Display Mode:	LCD

Products List



TC5901-L Series

- Wide LCD display with backlighting shows the room and set time and temperature even in the dark
- The LCD is divided into areas for better display
- Automatically turning on/off the thermostat at fixed time
- Displaying running time of fan coil unit
- Permanent memory retention
- Adaptive Intelligent Recovery
- Safe and reliable voltage drop by transformer
- Optional Infrared for remote control

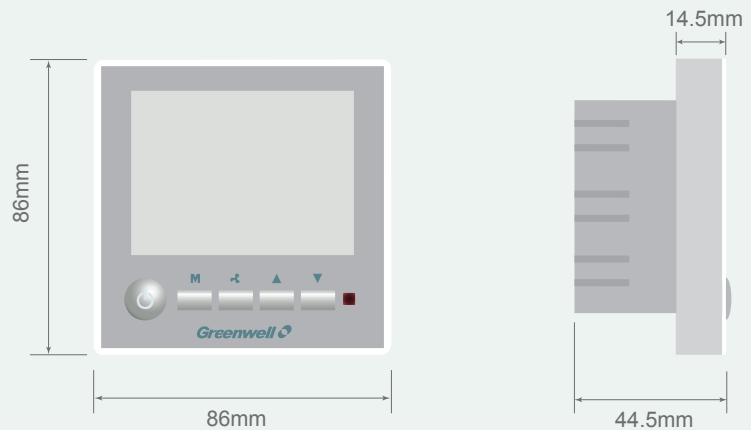


Part No.	Description
TC5901-L	Networkable. Not to control motorized valve.
TC5901-LB	Networkable. Not to control motorized valve. With blue backlight.
TC5901V2-L	Networkable. Controls a two-wire valve.
TC5901V2-LB	Networkable. Controls a two-wire valve. With blue backlight.
TC5901TV2-L	Networkable. Controls a three-wire valve.
TC5901TV2-LB	Networkable. Controls a three-wire valve. With blue backlight.
TC5901V4-L	Networkable. Controls 2 two-wire valves.
TC5901V4-LB	Networkable. Controls 2 two-wire valves. With blue backlight.
TC5901-SLB	Split-type. Networkable. Not to control motorized valve. With blue backlight.
TC5901V2-SLB	Split-type. Networkable. Controls a two-wire valve. With blue backlight.
TC5901TV2-SLB	Split-type. Networkable. Controls a three-wire valve. With blue backlight.
TC5901V4-SLB	Split-type. Networkable. Controls 2 two-wire valves. With blue backlight.



TC6012-L Series

- Acrylic front panel, customized colours for specific room style
- Precise temperature control of $\pm 0.5^{\circ}\text{C}$ tolerance
- Additional sensor port for additional temperature control
- Programmable temperature control involving multiple days and periods
- The fan status can be set in field to be controlled or not
- Safe and reliable voltage drop by transformer
- Direct installation on 86 size box



Part No.	Description
TC6012-LB	Networkable. Not to control motorized valve. With white backlight.
TC6012V2-LB	Networkable. For two-pipe system. Controls a two-wire valve. With white backlight.
TC6012TV2-LB	Networkable. For two-pipe system. Controls a three-wire valve. With white backlight.
TC6012V4-LB	Networkable. For four-pipe system. Controls 2 two-wire valves. With white backlight.
TC6012-SLB	Split-type. Networkable. Not to control motorized valve. With white backlight.
TC6012TV2-SLB	Split-type. Networkable. For two-pipe system. Controls a two-wire or a three-wire valve. With white backlight.
TC6012V4-SLB	Split-type. Networkable. For four-pipe system. Controls 2 two-wire valves. With white backlight.

Management Software for Networkable Thermostat

HW-BA5050 Management Software



- Complete control & accountability. Get the temperature you want, when you want it
- Reading and setting up room temperature remotely
- Controlling fan coil and displaying its status remotely
- Group control by zone
- Graphic display and operation interface with pop-up sound, graphic alarm and complete history log
- Real-time zonal status accessible by administrator
- Fault and location report, easy for system maintenance
- ACCESS database ensures stable running and high reliability
- Remote billing energy and accountability
- Hotel guest room control

Network and Networking Modules & Accessories

HW-BA5221-W2 Gateway

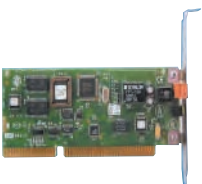


HW-BA5221 Gateway is applied to connect equipments with RS-232/485 interface protocol to the LONTALK System, and implement the communication between RS-232/485 equipments and LON equipments and host Computer Manage System.

- Communication mode (RS-232 or RS-485) can be selected through jumpers
- Support for special customized equipment interface protocol
- Reading all running parameters of thermostat in real time and sending them to computer management system.
- Receiving commands from the computer management system to setup the thermostats

Operating Voltage:	24VDC
Operating Current:	< 25mA
Operation Environment:	-20°C ~ 60°C, 10% ~ 95% RH, non-condensing
Network Protocol:	LONTALK, RS-232/485 Bus
Communication Ports:	2 LON port and 1 RS485 port

PCLTA-21 Lon Adapter

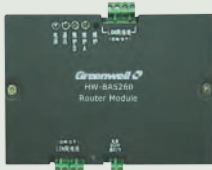


PCI interface card connecting computer and LonWorks (For networkable system).

- Universal 32-bit PCI adapter card for LONWORKS networks for PCs with 3.3V or 5V PCI
- Plug-and-play network driver compatible with Microsoft Windows 98/2000 and Windows XP/ Server 2003
- Downloadable firmware allows updates without accessing or changing hardware
- Integral FT 3150 Free Topology Smart Transceiver, RS-485, TPT/XF-78, or TPT/XF-1250 transceiver
- CE Mark, U.L. Listed, cU.L. Listed

Memory:	58Kbytes SRAM
PC Bus Interface:	Universal 32 bit PCI (3.3V, 5V, 32 bit, 64 bit PCI and PCI-X)
Operating Input Current:	< 350mA
Operation Environment:	0°C ~ 70°C, 20% ~ 90% RH, non-condensing

**HW-BA5260
Router Module**



HW-BA5260 Router is a router to connect two LonWorks network (generally between the trunk and branch), which is mainly used to optimize network performance and improve network communication quality.

- Connecting two TP/FT-10 LonWorks channels
- Built-in insulated power supply
- Can be used as router or repeater
- Easy in installation and maintenance

Operating Voltage:	24VDC
Operating Current:	< 20mA
Operation Environment:	-20°C ~ 60°C, 10% ~ 95% RH, non-condensing
Network Protocol:	LONTALK

**HW-BA5971V Series
Drive Module for
Networkable Thermostat**



HW-BA5971 V

Networkable fan coil drive module controlling one 3 speed fan coil unit and associated control valves. Requires to be connected with an individual thermostat controller (TC5901/6012-SLB, TC5901V2-SLB, TC5901/6012TV2-SLB or TC5901/6012V4-SLB)



HW-BA5971 V-4

Networkable fan coil drive module for parallel control of 4 separate 3 speed fan coil and associated control valves. Requires 1 thermostat controller (TC5901/6012-SLB, TC5901V2-SLB, TC5901/6012TV2-SLB or TC5901/6012V4-SLB)



HW-BA5971 V-6

Networkable fan coil drive module for parallel control of 6 separate 3 speed fan coil and associated control valves. Requires 1 thermostat controller (TC5901/6012-SLB, TC5901V2-SLB, TC5901/6012TV2-SLB or TC5901/6012V4-SLB)

Beijing Olympic Village



The Olympic Village, one of the important projects of the Olympic and the Paralympic 2008, consists of 42 apartment buildings with building area of 370,000m², provide accommodation, leisure and entertainment to 16,000 athletes and officials from all over the world during the Olympic and the Paralympic Games.

Greenwell provide 30,000 TC-5901 networkable thermostats for the Olympic Village. Energy-saving of air-conditioning management system takes effective control of the fan coil to improve the energy efficiency of the Olympic Village.

The networkable fan coil system has one control center and four sub-control centers. The control center is positioned to the west of the Village; the sub-control center respectively manages the thermostat is in area A,B,C,D. Every fan coil incorporates a networkable thermostat and motorized valves, with a gateway installed for each floor in the LV riser. Which in turn connects all the thermostats via an RS485 bus. The sub-control center manages the thermostat and translates the data through the gateway, consolidating the function of the management of thermostat and real-time maintenance.

The application of the energy-saving system by Greenwell accommodates the residents a favorable living and humanistic environment, as well an access to a effective energy-saving and easier management, which reflects the three concepts of "environment-friendly Olympics, culture-enriched Olympics and technology-empowered Olympics".



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