

Intelligent HVAC Temperature Controls







Welcome to meitav-tec

One of the world's leading companies in the field of intelligent HVAC temperature control. Since its foundation in 1989, Meitav-tec has been providing innovative, tailor made HVAC control solutions. Driven by technological innovation and guided by a veteran, top expertise R&D team, Meitavtec has vast experience in the design, manufacture, sale and support of HVAC control solutions. Our high quality, reliable products provide our customers with the latest, state-of-the-art technology at an affordable price.

Meitav-tec provides intelligent control solutions for all types of HVAC systems for light commercial or residential applications. Our product range is wide, starting from the simplest of thermostats to the most advanced communication controllers. In addition to the standard line of products, Meitav-tec specializes in developing & manufacturing, on short cycle, 'tailor-made' products according to customers specifications and special HVAC needs. Combined with our flexible in house production line, allowing us to make small production batches for these special projects. These key features are what differentiate us from our competitors and makes us the preferred choice for special projects. It also gives us an advantage among OEM companies, a key part of our business.

Meitav-tec has a global network of agents, distributors and OEM's in over 25 countries spreading across 5 continents. Among our customers are many well-known companies, such as Airedale, Belimo, Carrier, Electra, Trane, Johnson Controls, A-Group, Modine, Kwikool, TROX and others. Meitav-tec customers can benefit from caring support services regarding the installation, configuration and operation of its products.

Meitav-tec is renowned for its strict Quality Assurance and product reliability and has been awarded with ISO-9001:2015 Quality certification. Our dedication to quality guarantees product reliability and durability as well as process control and internal quality management.

Beyond its first-class products, Meitav-tec endeavors to protect the environment by developing energy saving products. Greenhouse gases, produced by industrial processes, may excessively raise the temperature of our planet to hazardous levels. Meitav-tec is committed to the environment and fights global warming by designing thermostats with advanced algorithms that help save on HVAC expenses, save energy and protect our planet.

Partnerships with OEM's

We offer OEM's 'tailor-made' solutions, after fully understanding their products and their needs. We offer partnership along the whole process from a "dream" to the "product".





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Building Automation

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ALTC/SUPER

FMHC-FC-MDB-03

FMHC-VFS-FC-MDB-01

VFS-FC-SUPER 15

CTU – Main Controller

CTUx601 - Input/output Card

CTU2646 - Input/output Card

CTU AHU – Air Handling Unit Controller

TCP/IP - Web HVAC Network Controller & Viewer

On/Off Thermostats

MTS/SUPER, MTSV/SUPER

TAT/FC/SUPER3 Series

On/Off Thermostats – Programmable Thermostats

ERT100/LCD/IR

MTSC/SUPER/PROG

Proportional Thermostats

MTS/SUPER and MTSC/SUPER

Fan Coil Controllers – 0-10VDC Fan

ALT24-P-PD-FC-SUPER

MTS/SUPER

VFS-FC-SUPER

FMHC-VFS-FC-MDB

Special Controllers

MTSC/SUPER/HU

TLC-24

EC300

Air Quality

SensiCO PX300 - CO Sensor

Sensors & Accessories

MRSC-SUPER Temperature-Humidity-CO2 decorative sensor with MODBUS communication

Remote Control Units

TS01, TS02, TS05, TS06, RS01, RS02, DT02 Temperature Sensors



Meitav-tec Naming Rules:

Product name is usually an abbreviation of product model, followed by various possible features, such as operating voltage, number of Cooling/Heating stages, fan speed, or remote control.

Feature	ture Description		
Plastic type (shape)	See next page		
System type	Air Condition/Fan-Coil/VAV	AC/FC/VAV	
Supply voltage	Line voltage 110VAC-230VAC/110VAC/220VAC/12VDC/24VAC	None/110/220/12/24	
Fan speeds	1 Speed/2 Speeds/3 Speeds	1S/2S/3S	
(ac)	Separate outputs for Cool and Heat	HC## (stages heat, cool)	
System type (AC)	Heat Pump system (reversing valve)	HP## (stages heat, cool)	
	Separate Proportional outputs for Cool and Heat (0-10V)	р	
	One Proportional output for Cool and Heat	PD	
System type (FC)	One Pulse Modulating output – 3 wire –open, common, close – for both Cool and Heat	РМ	
	Two separate Pulse Modulating outputs – 3 wire – open, common, close – for Cool and Heat	PM2	
	One Pulse Modulating – 3 wire – open, common, close for Cool and one on/off output for Heat	РМН	
	several configurations in one product, selectable by DIP switches	SUPER	
	Freeze Protection	FP	
	Infra Red remote control – optional	IR	
Others	Weekly Program (programmable)	PROG	
	Humidity sensor	ни	
	CO2 sensor	CO2	
	Special features in the product differentiate it from the same product without the 0X name extension	01/02/03/	

Examples:

	Shape: ALT/ETN, Voltage: 24VAC, FC Type: 1 (PD) or 2 (P) Proportional outputs,				
ALIZ4-P-PD-PC-SUPER	System type: Fan-Coil (FC), DIP switch selectable configurations (SUPER)				



Thermostats are typically divided to:





Thermostats are typically divided to





MTSC/SUPER, MTSCV/SUPER - THERMOSTATS SERIES



Touchscreen Flush mount thermostat for various HVAC applications with BACnet & MODBUS interface

Stylish designed with user friendly touch-screen icons interface - Universal room thermostat. 6 D/O, 2 A/O and 2 U/I, 110-230VAC (available also in 24VAC models) for both **fan coil** and **air condition** control

Vertical or Horizontal design well suited for commercial and residential applications

Up to 2 cooling stages, 4 heating stages, 3 fan speeds or VFS

Daily/Weekly Programs (optional)

General Features & Benefits

- Stylish design, large sensitive touch screen display
- Clear icons for the operation functions
- Easy configuration with DIP Switches and technician settings procedure
- Temperature readings from the thermostat or from an External sensor
- I/O list:
 - 6 D/O Maximum 3A each, 5A total
 - 0 2 A/O 0-10V
 - 2 U/I D/I or 0-10V input
 - 2 X RS485 terminals (A/B)
- Touch, backlit display with adjustable dimming time and level
- Flush mount installation with CARLON B114r boxes or similar (standard GEWISS GW24403)
- Optional extension cable for wall mounting

- Optional External Temperature sensor
- Optional Buttons Lock
- White or Black with optional colored frame
- °F/ °C scale
- Ambient Temperature display & reading offset
- Occupancy sensor input for energy saving
- Economy Mode
- Filter clean/replace alert with adjustable time
- Freeze Protection adjustable temperatures
- Auto Fan (fan on demand)
- Compressor Protection delay timer
- Configurable time delay between compressor stages: 0-360 seconds.
- Support Heat Pump configuration (Reversing Valve)
- Oil/Gas operation in Heat Mode



Building Automation

Optional configurations including



Wiring Diagram (generic)



Building Automation



Comparison Table							
Vertical Models	Horizontal Models	Humidity	CO ₂	PIR	Programming Mode	Available in 24VAC configuration	
MTSVCW/SUPER	MTSC/SUPER					v	
	MTSC/SUPER /CO2		v			v	
MTSCV/SUPER /HU	MTSC/SUPER /HU	v				v	
MTSCVW/SUPER /PROG/HU	MTSC/SUPER /PROG/HU	v			v	v	
MTSCVW/SUPER /HU/PIR	MTSC/SUPER /HU/PIR	v		v		v	
MTSCV/SUPER /PROG	MTSC/SUPER /PROG				V	٧	

All MTS<u>C</u> Models communicate with BACnet & MODBUS interface.

Selection between protocols done by DIP Switches settings in the thermostat

All MTS models control Heat/Cool, A/C, Rooftops, PTACs systems and Fan Coils 2-pipe or 4-pipe systems and

offer 3 speeds and VFS fan control.

All models are available in White or Black colored frame and display.

All models are available without Communication interface to B.M.S/B.A.S./Smart-Homes (see MTS on page 20)

MTSC Ordering code ("W" – White color refers to the frame):

1.	MTSC	- Horizontal panel	Black color	Line voltage
2.	MTSCW	- Horizontal panel	White color	Line voltage
3.	MTSCV	- V ertical panel	Black color	Line voltage
4.	MTSC VW	- Vertical panel	W hite color	Line voltage

Optional configurations:

- 24: /24 after the P/N indicates that the thermostat is a 24VAC operated model
- PROG: /PROG after the P/N includes Weekly-Program (Scheduling) and RTC in the thermostat
- Humidity: /HU after the P/N Includes Humidity sensor (ex.: MTSC/W/HU Horiz., 220V, White w/Humidity sensor)
- CO2: /CO2 after the P/N Includes CO2 sensor (ex.: MTSCV/CO2 Vertical, black w/CO2 sensor Line voltage)
- PIR: /PIR after the P/N includes built-in PIR Occupancy sensor in the thermostat

The "MTS Help me Choose Wizard" (link) is a tool for engineers and specifiers, helping them to find the exact needed features from their thermostat

"DIP Switches configuration settings helper" is a free tool available on our website. The tool helps installers and technicians learn the needed DIP Switches configuration and the I/Os connections according to the HVAC system they install. By selecting the HVAC system (number of Heating/Cooling stages, Fan speeds etc.) the tool helps to define the correct DIP Switches configuration needed.



ALTC/SUPER - THERMOSTATS SERIES



Thermostat for various HVAC applications with BACnet & MODBUS interface

Stylish designed with user friendly LCD display and silicon rubber buttons interface Universal room Thermostat, 6 D/O, 2 A/O and 2 U/I., 24VAC (available also in line voltage model with Flush mount wiring connection) for both **fan coil** and **air condition** control, suited for **commercial and residential applications**

Up to 2 cooling stages, 4 heating stages, 3 fan speeds or VFS

Daily/Weekly Programs, 5-1-1 or 7 days (optional)

General Features & Benefits

- Stylish design
- Clear icons on LCD for all the operation functions
- Simple and easy functional pressed silicon rubber buttons
- Easy configuration with DIP Switches and technician settings procedure
- Temperature readings from the thermostat or from an External sensor
- I/O list:
 - 6 D/O Maximum 3A each, 5A total
 - 0 2 A/O 0-10V
 - 2 U/I D/I or 0-10V input
 - 2 X RS485 terminals (A/B)

- Backlit display with adjustable dimming time and level
- Optional External Temperature sensor
- Optional Buttons Lock
- °F/ °C scale
- Ambient Temperature display & reading offset
- Occupancy sensor input for energy saving
- Economy Mode
- Filter clean/replace alert with adjustable time
- Freeze Protection adjustable temperatures
- Auto Fan (fan on demand)
- Compressor Protection delay timer
- H/P and H/C heating configurations

Optional configurations including





- Built in Humidity sensor (option)
- Humidity set-point controls
- Humidifier/de-humidifier outputs
- Cool + re-Heat de-humidification option
- Can be integrated with occ. Input

Occupancy sensor

- Built-in OCC PIR sensor
- Integration with Energy Saving
- algorithms and door switch/key
- input
- 5 m. / 15 ft. detection



- Weekly-Program (Scheduling)
- Built in RTC (real time clock)
- 5-1-1, 7-Days or Daily programs



Building Automation

Wiring Diagrams (generic)



Building Automation



Comparison Table								
Models	Humidity	PIR	Programming Mode	Available in line voltage				
ALTC24/SUPER				V				
ALTC24/SUPER /PROG			V	v				
ALTC24/SUPER /HU	v			v				
ALTC24/SUPER /PROG/HU	v		V	v				
ALTC24/SUPER /HU/PIR	v	V		v				
ALTC24/SUPER /PROG/HU/PIR	v	V	V	v				

All ALT<u>C</u> Models communicate with BACnet & MODBUS interface. Selection between protocols done by DIP Switches settings in the thermostat

All ETNC models control Heat/Cool, A/C, Rooftops, PTACs systems and Fan Coils 2-pipe or 4-pipe systems and offer 3 speeds and VFS (ECM) fan control.

All models are available without Communication interface to B.M.S/B.A.S./Smart-Homes

Optional configurations:

- 24: /24 after the P/N indicates that the thermostat is a 24VAC operated model. No 24 indication means
 line voltage thermostat with flush mount design
- PROG: /PROG after the P/N includes Weekly-Program (Scheduling) and RTC in the thermostat
- Humidity: /HU after the P/N Includes Humidity sensor (example: ALTC24/HU 24VAC with Humidity sensor)
- PIR: /PIR after the P/N includes built-in PIR Occupancy sensor in the thermostat

The "ALTC Help me Choose Wizard" (link) is a tool for engineers and specifiers, helping them to find the exact needed features from their thermostat

"DIP Switches configuration settings helper" is a free tool available in our website. The tool helps installers and technicians learn the needed DIP Switches configuration and the I/Os connections according to the HVAC system they install. By selecting the HVAC system (number of Heating/Cooling stages, Fan speeds etc.) the tool helps to define the correct DIP Switches configuration needed.

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FMHC-FC-MDB-03 & FMHC-VFS-FC-MDB-01

Flush-Mount, 230VAC Thermostats for Fan Coil applications

The FMHC220-VFS-FC-MDB-03 allows users the flexibility of having one main controller for most Fan Coil applications with EC motor fan. The FMHC-FC-MDB-03 provides the same features for 3 fan speeds F/C units. It can be flush-mounted or installed directly into the Fan Coil, with an external sensor for the return air.

The thermostats offer a special input for 1 of the 4 options:

- Auto-change over sensor, where the incoming water temperature dictates the Mode.
- 2. Contact input for a remote switch, which changes the Mode of one or many thermostats linked together.
- 3. Contact input for a remote switch, which activates Economy mode.
- 4. Contact input to Turn OFF units.

General Features

- Flush-mount 110VAC or 220VAC or 24VAC Thermostat
- MODBUS RTU interface to B.M.S.
- Used for the following Fan-Coil configurations:
- 4 pipe system 2 valves
- 2 pipe system 1 valve
- Fan Coil no valve
- Configurable 0-10VDC ECM proportional Fan (VFS model)
- 3 Fan speeds
- DIP switch control options:
- Manual Cool/Heat or Auto-Change
- Display of set-point temperatures only
- Fan/Auto Fan or all time Auto Fan selectable
- Internal / External sensor
- Lock buttons
- Set point limits





- Condensing Pump Output
- Energy saving cost efficient, environmentally friendly thermostat
- Available in different colors
- Special Input for:
- Auto-change over sensor mode is set based on temperature of the incoming water flow, ideal for 2-pipe systems.
- Contact input for a remote switch, which sets the mode of one or more thermostats linked together (available only for 2-pipe systems).
- Contact input to activate Economy Mode unit reverts to pre-determined economy set points
- Contact input to turn the unit Off





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VFS-FC-SUPER

Main Controller for Fan Coil applications with EC motor fan, and optional hand-held remote control + IR panel, or wall mount panel.

Main controller for various Fan Coil applications. Together with a thermostat panel or IR-Receiver and a remote control, this controller becomes highly attractive and an ideal 'general purpose F/C controller'. VFS-FC-SUPER has a modular, user-friendly design with various F/C applications built-in, field selectable. This modularity allows you to have one main controller for different F/C applications and suit it according to customer's needs on the spot.

General Features

- Main Supply 230VAC or 24VAC
- Various F/C application, jumper selectable:
- 2 pipe systems
- 4 pipe systems
- No valve systems
- Fan Configurations:
- EC-motor 0-10VDC control
- 3 fan speeds

- T1 Return Air Sensor
- T2 Auto-Change Over sensor for 2-pipe - Option T2<20°C - Cool,
 - T2>20°C Heat
- T3 Indoor coil sensor T3 >32°C - Fan starts
 - T3< 36°C Fan stops Option

 Fault input, dry contact – when contact opens, unit turns off and warning, indications lights will flash

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Building Automation

Modbus

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Occupancy sensor Input

On/Off Mode Fan

- Wall mount thermostats option
- Hand-Held Remote Control + M101P
- Pump output active in Cool mode
- Timer Start/Stop, programmable • from Remote Control
- Master & Slave configuration is available between several controllers





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CTU – Main Controller – Building Automation

Main Controller for B.M.S

The CTU is a smart, highly versatile controller; Meitavtec has especially developed this product to meet the need for a controller, readily implemented for customer's unique HVAC application. The CTU is a **"Plug & Play"** communicating controller – Does not require Technician Configuration when installed.

The CTU adaptability is an ideal solution for OEM's and Contractors who require "tailor made" controller configured according to their particular requirements at a The CTU controller offers advanced communication protocol capabilities, such as Modbus or BACnet for B.M.S control and selectable power supplies 110-230VAC or 24VAC,.

General Features

- Main supply: 110VAC, 230VAC or 24VAC
- RS-485 Communication port Available in BACnet, Modbus and proprietary Maxinet protocols.
 - * CTU2500 Family BACnet protocol (BTL Certified)
 - * CTU4500 Family Modbus protocol
- Panel interface to various designs Wall/flush mount/IR panels
 optional
- Inputs:
 - * 8 x Digital Inputs
 - * 2 x Analog inputs (0-10VDC)
 - * 3 x Temperature Sensor inputs 50K @ 77°F
- Outputs:
 - * 8 x Digital Outputs (110VAC, 230VAC or 24VAC depending on the supply voltage)
 - * 2 x Analog Outputs (0-10VDC)

- 12VDC power supply for occupancy sensor
- Adjustable Set point limits for cooling and heating
- Auto fan (fan on demand) optional
- Fan On/Auto-Fan in Cool/Heat DIP switch selectable
- Offset for temperature reading adjustment
- IR input
- 2 indication LEDs
- MAC address 1-255 by DIP switch
- 4 DIP switches for configuration purposes
- DIN rail connection
- CE certified
- Energy saving cost effective, environmentally friendly controller



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Diagram (generic)



Wall Panels Configurations

Control Panels/Accessories

HVAC Application classification:

CTU Fan-Coil controllers

- * FC-SUPER
- * P-FC-SUPER
- * PM2-FC-SUPER
- * TA2-FC-SUPER

CTU Air Condition controllers

- * AC-SUPER
- WSHP (Water Source Heat Pump)

Outputs operation

- * On/Off
- * 0-10VDC proportional for Valve/Fan
- ^k 3 wire (Open/Common/Close) 24VAC
- * Thermal Actuator (230VAC)
- ^k Compressor & Heat Pump outputs
- * Compressor & Heat Pump

MTS-X500-Room panel for CTU B.M.S. controllers

Flush mounted Horizontal / Vertical type with touchscreen and backlit display for the CTU series communication controllers.

- 12VDC powered from the CTU controller
- White or Black with optional colored frame
- °C/°F scale

General Features & Benefits

- Touch-screen stylish design, with clear, large buttons and display
- Temperature readings from the main controller (CTU) or from the room panel selectable
- Backlit display with adjustable dimming time and level
- Flush mount installation with standard CARLON B114r boxes or similar (GW24403)
- Optional wall mounting configuration
- Optional colored frame

Note: the system modes, fan speeds and fan on demand option – depend on main controller (CTU) type.

MTS/X500 Ordering Codes:

- MTS/X500 Horizontal panel, Black color
- MTSV/X500 Vertical panel, Black color
- MTSW/X500 Horizontal panel, White color
- MTSVW/X500 Vertical panel, White color
- MTS/WM500 Wall mounted version

Optional configurations:

• Humidity

/HU after the P/N Includes Humidity sensor (example: MTS/W/X500/HU - Horizontal, White w/Humidity sensor)

• CO2

/CO2 after the P/N Includes CO2 sensor (example: MTSV/X500/CO2 - Vertical, black w/CO2 sensor)

** - Note: Features in the room panels are available only if the CTU controller supports such

CTU4601/2601 family

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Input/Output card for BACnet or Modbus communication net

The CTU-x601 is an Input/Output (I/O) card for **BACnet, Modbus or Maxinet communication** network, designed **to control various devices** from the Building Automation Server/Application.

General Features

- Main supply: 110VAC -230VAC or 24VAC
- RS-485 Communication port Available in BACnet, Modbus and proprietary protocols.
 - * CTU2601 Family BACnet protocol (BTL Certified)
 - * CTU4601 Family Modbus protocol
- 8 x Digital Inputs voltage free dry contact
- 3 x Temperature Sensor inputs 50K @ 77°F

Wiring Diagram

- 8 x Digital Outputs Available in either 110VAC, 230VAC or 24VAC
- 2 x Analog Outputs, 0-10VDC
- Easy connection to DIN Rail
- MAC Address selection by DIP Switches

Note: 24VAC to Dry contact Adaptor can be supplied upon order.

Building Automation

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ASHERE BACnet

lodbus

CTU2646 - Input/output Card

Input/output card for BACnet or Modbus communication networks

The CTU2646 is an Input/output (I/O) card for BACnet or Modbus communication protocols, designed to control various devices from the Building Automation Server/Application.

General Features

- Main supply: 110VAC or 230VAC
- RS-485 Communication port BACnet or Modbus operation selectable by DIP switch
- 12 x Digital Inputs voltage free dry contact
- DI12 digital input can be converted to 220V Input jumper selectable
- 4 X Digital outputs (Change Over)
- Selectable Digital outputs configuration N.O/N.C

Wiring Diagram

- Easy connection to DIN Rail
- MAC Address selection by DIP Switches

Note: 24VAC to Dry contact Adaptor can be supplied upon order (not included).

CTU-2646

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CTU AHU – Air Handling Unit Controller

AHU Controller

Meitav-tec CTU AHU Controller has been designed and configured to control Air Handling Unit (AHU) as per customer's specifications.

The CTU AHU is a **"Plug & Play"** controller, suitable for small/medium AHU

without the need to modify/program the software for each application. This high performance, reliable controller is **locally operated by a panel display and communicates with the B.M.S by Modbus protocol.**

- Main supply: 110VAC, 230VAC or 24VAC
- Outputs:
 - Cool Valve
 - Heat Valve
 - Fresh Air Damper
 - Internal Fan proportional 0-10VDC
- Inputs:
 - Return air
 - Supply air
 - Outdoors air

Wiring Diagram

(Example of OEM product)

• Digital inputs (Dry contact):

- Duct High pressure
- Duct Low pressure
- Fire alarm
- Smoke alarm
- Easy connection to DIN Rail
- MAC Address selection by DIP Switches

Note: other configurations and Features are available Per customer specifications

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TCP/IP - Web HVAC Network Controller & Viewer

The TCP/IP/WEB controller is an ideal solution for real-time monitoring and control of a thermostat network, via the internet, without the need for designated computer.

The TCP/IP/WEB enables web access to the HVAC Network Control program via an exclusive IP, and therefore doesn't require a main control computer. Up to 4x60 Meitav-tec thermostats/controllers can be connected to each TCP/IP/WEB via RS-485 communication network making the control simple, easy and most importantly accessible from any device with internet connection. TCP/IP/WEB offers a user friendly interface with options for area/floor scheme display, text alarms to cellular phones, weekly programs, data logger and more...

General Features

Main supply: 110VAC or 230VAC

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- Real-Time, thermostats network main controller
- Web access to each controller via exclusive IP
- Adjustable Set point limits for cooling and heating
- Weekly programs
- Data logger (can be exported to Excel)
- Alarm to telephone numbers by Textin or e-mailing optional
- Ethernet/Internet Connection

Benefits

- Friendly, clear graphic display of all units
- Remote control of all units in the network
- Replaces the need for dedicated computer on site
- System continues to work as a standalone system when disconnected from the web

On/Off Thermostats

MTS/SUPER, MTSV/SUPER

MTS Touch Screen Thermostat- with the following optional controlling features:

- Weekly Program (Scheduling)
- Humidity sensor

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- CO2 sensor and Fresh Air Supply control
- PIR Occupancy Sensor
- Lights control

Flush Mounting Touchscreen thermostat with backlit display for various HVAC applications such as A/C, F/C, SWHP, PTAC,

Floor heating and more.

110-230VAC (24V model also optional) operated, 6 D/O, 2 A/O and 2 U/I, VFS (ECM Fan Motor) output

General Features & Benefits

- Stylish design, large sensitive touch screen display
- Clear icons for the operation functions
- Easy configuration with DIP Switches and technician settings procedure
- Temperature readings from the thermostat or from an External sensor
- Backlit display with adjustable dimming time and level
- °C/°F scale

MTS Ordering code:

- 1. MTS Horizontal panel, Black color, 220V
- 2. MTSV Vertical panel, Black color, 220V
- 3. MTS/W Horizontal panel, White color, 220V
- 4. MTSV/W Vertical panel, White color, 220V

- I/O list:
 - 6 D/O Maximum 3A each, 5A total
 - 0 2 A/O 0-10V
 - 2 U/I D/I or 0-10V input
- Flush mount installation with standard CARLON B114r boxes or similar (GW24403)

MODE

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FAN

- Optional extension cable for wall mounting
- White or Black with optional colored frame

Optional configurations:

- Vertical / Horizontal
- Humidity: /HU after the P/N Includes Humidity sensor (example: MTS/W/HU - Horizontal, White w/Humidity sensor)
- CO2: /CO2 after the P/N Includes CO2 sensor (example: MTSV/CO2 - Vertical, black w/CO2 sensor)
- Lights control Room panel, flush mounted

On/Off Thermostats

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On/Off Thermostats

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TAT/FC/SUPER3 Series

Flush-Mount, Line voltage 110VAC-230VAC or 24VAC,

For most Fan-Coil applications

The TAT/FC/SUPER3 series allows users the flexibility of having one main controller for most Fan-Coil applications. It can be flush-mounted or installed directly into the Fan-Coil, with an External temperature sensor for the **return air.**

General Features

- Flush-mount, Line voltage 110VAC-230VAC or 24VAC, Thermostat
- Fan-Coil supported configurations (By DIP Switch):
 - 4 pipe 2 valves
 - 2 pipe 1 valve
 - no valve
- Manual Cool/Heat or Auto-Change between modes (DIP Switch selected)
- Temperature display Ambient and Set-Point, or Set-Point display only (DIP Switch selected)
- Fan/Auto Fan or all time Auto Fan (DIP Switch selectable)
- Internal/External temperature sensor (DIP Switch selectable)
- Adjustable Set Point Temperature limits password protected
- Lock buttons password protected

- Special Input can be used for:
 - Auto-change over sensor mode is set based on temperature of the incoming water flow, ideal for 2pipe systems.
 - Contact input for a remote switch, which sets the mode of one or more thermostats linked together (available only for 2-pipe systems).
 - Contact input to activate Economy Mode unit works according to pre-determined economy set points
 - Contact input to turn the unit Off
- Energy saving cost effective, environmentally friendly thermostat
- Available in different colors
- Also available with Proportional (0-10VDC) Valves output – TAT-P-FC-SUPER model

On/Off Thermostats - Programmable Thermostats

ERT100/LCD/IR

Wall-mount 230VAC Thermostat, Heat-Pump configuration,

12-hour timer and an option for a Remote-Control Unit

The ERT100-LCD-IR is a fully featured thermostat, Suitable for central mini-duct or

split-unit AC system.

It has heat pump configuration, 3 fan speeds, and 12-hour timer and a remote control option.

The ERT-100-LCD-IR is an easy to use thermostat with a clear,

Easy to read LCD display.

General Features

- Wall-mount, 230VAC thermostat
- 1 compressor for both Cool and Heat (Heat Pump)
- 3 fan speeds
- Auto Fan selectable
- 3 minutes compressor delay
- 12-hour Timer automatically turns the unit on/off within 12-hour
- Wiring diagram
- Energy saving cost efficient, Environmentally Friendly thermostat
- Remote Control optional
- Large & easy to read LCD display
- Comfortable silicon rubber buttons
- Ambient temperature display (display/hide) optional

Wiring diagram:

MTS/SUPER/PROG - PROGRAMMABLE SERIES

Flush mount, Touchscreen thermostat, US and EU Weekly Program 5-1-1 / 7days, for ALL HVAC applications (optional BACnet & MODBUS interface - MTSC versions)

Stylish design, large sensitive touch screen display, 6 D/O, 2 A/O (0-10V) and 2 U/I, 110-230VAC or 24VAC,

14 DIP Switches- option variety for fan coil and air condition control.

Vertical or Horizontal design well suited for commercial and residential applications

Up to: 2 Compressor stages for cooling, 3 Electrical Heat elements stages for heating, 3 fan speeds or VFS

General Features & Benefits

- Clear icons for the operation functions
- Easy configuration with DIP Switches and technician settings procedure
- Temperature readings from the thermostat or from an External sensor

I/O list:

- 6 D/O Maximum 3A each, 5A total
- O 2 A/O 0-10V
- 2 U/I D/I or 0-10V input
- Touch, backlit display with adjustable dimming time and level
- Flush mount installation with CARLON B114r boxes or similar (standard GEWISS GW24403)
- Optional extension cable for wall mounting
- Optional External Temperature sensor

Program types

- 5-1-1 Different programs for the weekdays, Saturday and Sunday
- 7-Days Different programs for every day of the week
- Daily

- Optional Buttons Lock
- White or Black with optional colored frame
- °F/ °C scale
- Ambient Temperature display & reading offset
- Occupancy sensor input for energy saving
- Economy Mode
- Filter clean/replace alert with adjustable time
- Freeze Protection adjustable temperatures
- Auto Fan (fan on demand)
- Compressor Protection delay timer
- Configurable time delay between compressor stages:
 0-360 sec
- Support Heat Pump configuration (Reversing Valve)
- Oil/Gas operation in Heat Mode
- Emergency Heat in HP Mode

Event settings options

- Start time and Stop time
- Start time, Stop time and set point
- Start time, Set cool and set heat
- Number of events per day: 4

See Wiring Diagrams and Comparison Table on pages 8-9

MTS/SUPER and MTSC/SUPER

Touchscreen Thermostats - Proportional Outputs

On/Off Outputs, Proportional 0-10VDC outputs, VFS (ECM Motors) outputs, Floor

Heating, easy configuration, Universal Flush Mounting room thermostat, 110-230VAC

(available also in 24VAC) for fan coil and air condition control

Vertical or Horizontal design well suited for commercial and residential applications

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See Wiring Diagrams and Comparison Table on pages 8-9

Fan Coil Controllers – 0-10VDC Fan

ALT24-P-PD-FC-SUPER

Wall-mount, 24VAC thermostats,

for all Fan-Coil Proportional Valve applications.

The proportional series thermostats are designed to control a wide variety of Fan-Coil applications, with Proportional Valves configurations. Proportional thermostats suggest different proportional outputs such as 0-10VDC or 2-10VDC, 3 wires (Open-Common-Close), Various Fan Speed control combined with additional Energy Saving Algorithms and Logic.

General Features

- Wall-mount, 24VAC thermostats
- Fan-Coil supported configurations:
 - 4 pipe 2 valves
 - 2 pipe 1 valve
 - No valve
- Valves Output types:
 - Proportional outputs 0-10VDC or 2-10VDC
- 1,2 or 3 Fan speeds
- Modes: Cool/Heat/Auto, Cool/Heat/Fan, Cool Only
- Auto Fan Speed Fan speed will be automatically increased or decreased to achieve user comfort together with Fast Cool/Heat.

- External Temperature Sensor optional
- Auto-change-over between Cool/Heat by T2 sensor (in 2-Pipe systems)
- °F or °C Temperature Scale
- Cool and Heat adjustable temperature limits
- Offset for temperature reading adjustment
- IR Remote Control optional
- Daily, digital Timer optimal when you are asleep or away
- Buttons Lock optional
- Energy saving cost effective, environmentally friendly thermostat

MTS/SUPER

Touchscreen thermostat for Fan Coil Controllers – 0-10VDC Fan aplications

(Optional BACnet & MODBUS interface - MTSC model)

6 D/O, 2 A/O and 2 U/I

Universal room thermostat 110-230VAC (available also in 24VAC)

for Fan Coils 2-pipe or 4-pipe systems and offers 3 fan speeds and VFS.

Vertical or Horizontal design well suited for commercial and residential applications

General Features & Benefits

- Stylish design, large sensitive touch screen display
- Clear icons for the operation functions
- Easy configuration with DIP Switches and technician settings procedure
- Temperature readings from the thermostat or from an External sensor
- I/O list:
 - 6 D/O Maximum 3A each, 5A total
 - 2 A/O 0-10V
 - 2 U/I D/I or 0-10V input
- backlit display adjustable dimming time and level
- Flush mount installation with CARLON B114r boxes
- Optional extension cable for wall mounting
- Optional IR receiver for remote control
- Optional External Temperature sensor

- Optional Buttons Lock
- White or Black with optional colored frame
- °F/ °C scale
- Ambient Temperature display & reading offset
- Occupancy sensor input for energy saving
- Economy Mode
- Filter clean/replace alert with adjustable time
- Freeze Protection adjustable temperatures
- Auto Fan (fan on demand)
- Compressor Protection delay timer
- Configurable time delay between compressor stages: 0-360 sec
- Support Heat Pump configuration (Reversing Valve)
- Oil/Gas operation in Heat Mode
- Emergency Heat in HP Mode

Comparison Table							
Vertical Models	Horizontal Models	Humidity	CO ₂	PIR	Programming Mode	Available in 24VAC configuration	
MTSVW/SUPER	MTS/SUPER					v	
	MTS/SUPER /CO2		v			v	
MTSV/SUPER /HU	MTS/SUPER /HU	v				٧	
MTSVW/SUPER /PROG/HU	MTS/SUPER /PROG/HU	v			v	v	
MTSVW/SUPER /HU/PIR	MTS/SUPER /HU/PIR	v		v		V	
MTSV/SUPER /PROG	MTS/SUPER /PROG				v	V	

All MTS Models are available also as MTSC communicate models with BACnet & MODBUS interface.

All MTS Sirius controls both Heat/Cool systems and Fan Coils 2-pipe or 4-pipe systems and offers 3 fan speeds and VFS.

All models are available in White and Black frame color and display with 24V OR line voltage.

MTSC Ordering code:

- 1. MTS Horizontal panel, Black color, 220V
- 2. MTSV-Vertical Panel, Black color, 220V
- 3. MTSV Vertical panel, Black color, Line voltage
- 4. MTS/W Horizontal panel, White color, 220V
- 5. MTSV/W Vertical panel, White color, 220V

Optional configurations:

- Humidity: /HU after the P/N Includes Humidity sensor (example: MTS/W/HU Horizontal, 110-230V, White w/Humidity sensor)
- CO2: /CO2 after the P/N Includes CO2 sensor (example: MTSV/CO2 Vertical, black w/CO2 sensor Line voltage)
- Lights control Room panel, flush mounted

Fan Coil Controllers – 0-10VDC Fan

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VFS-FC-SUPER

Main Controller for Fan Coil applications with EC motor fan, and optional hand-held remote control +IR panel, or wall mount panel.

Main controller for various F/C applications. Together with a thermostat panel or receiver and a remote control - this controller becomes highly attractive and an ideal 'general purpose controller'. VFS-FC-SUPER has a modular, user-friendly design with various F/C applications built-in, field selectable. This modularity allows you to have one main controller for different F/C applications and suit it according to customer's needs on the spot.

- Main Supply 230VAC or 24VAC
- Various F/C application, jumper selectable:
- 2 pipe systems
- 4 pipe systems
- No valve systems
- Fan Configurations:
- EC-motor 0-10VDC control
- 3 fan speeds
- T1 Return Air Sensor
- T2 Auto-Change Over sensor (for 2-pipe) T2<20°C – Cool, T2>20°C – Heat - Option
- T3 Indoor coil sensor T3 >32°C Fan starts
 T3< 36°C Fan stops Option

- Fault input, dry contact when contact opens, unit turns off and warning, indications lights will flash
- Occupancy sensor Input
- De-stratification (fan circulation option)
- Wall mount thermostats option
- Hand-Held Remote Control + M101P
- Pump output active in Cool mode
- Timer Start/Stop, programmable from Remote Control

Fan Coil Controllers – 0-10VDC Fan

FMHC-VFS-FC-MDB-01

Flush-Mount, 230VAC Thermostat for Fan Coil applications with EC-Motor fan.

FMHC220-VFS-FC-MDB-01 allows users the flexibility of having one main

controller for most Fan Coil applications with EC motor fan.

It can be flush-mounted or installed directly into the Fan Coil, with an external

sensor for the return air.

FMHC220-VFS-FC-MDB-01 also offers a special input for 1 of 4 options:

Auto-change over sensor, where the incoming water temperature dictates the Mode.

Contact input for a remote switch, which **changes the Mode of one or many thermostats**

linked together.

Contact input for a remote switch, which activates **Economy mode.** Contact input to Turn OFF units.

General Features

- Flush-mount 110VAC- 220VAC, or 24VAC Thermostat
- Can be connected to:
- 4 pipe system 2 valves
- 2 pipe system 1 valve
- Fan Coil no valve
- Configurable 0-10VDC ECM proportional band
- DIP switch control options:
- Manual Cool/Heat or Auto-Change
- Display of set-point temperatures only
- Fan/Auto Fan or all time Auto Fan selectable
- Internal / External sensor
- Lock buttons
- Set point limits

- Pump Output
- Special Input for:
 - Auto-change over sensor mode is set based on temperature of the incoming water flow, ideal for 2pipe systems.
 - Contact input for a remote switch, which sets the mode of one or more thermostats linked together (available only for 2-pipe systems).
 - Contact input to activate Economy Mode unit reverts to pre-determined economy set points
- Contact input to turn the unit Off
- Energy saving cost efficient, environmental friendly thermostat
- Available in different colors

MTSC/SUPER/HU

Touchscreen thermostat for Fan Humidity Controllers -

0-10VDC Fan applications with BACnet & MODBUS interface

Universal Touchscreen room thermostat with **2 A/O 0-10V for Humidifier and Dehumidifier** 110-230VAC (available also in 24VAC) for all HVAC applications Vertical or Horizontal design well suited for **commercial and residential applications**

vertical of Horizontal design wen suited for **commercial and residential applications**

Up to: 2 Compressor stages for cooling, 3 Electrical Heat elements stages for heating, 3 fan speeds or VFS

General Features & Benefits

- Clear icons for the operation functions
- Easy configuration with DIP Switches and technician settings procedure
- Temperature readings from the thermostat or from an External sensor

I/O list:

- * 6 D/O Maximum 3A each, 5A total
- * 2 A/O 0-10V
- * 2 U/I D/I or 0-10V input
- * 2 X RS485 terminals (A/B)
- Touch, backlit display with adjustable dimming time and level
- Flush mount installation with CARLON B114r boxes or similar (standard GEWISS GW24403)
- Optional extension cable for wall mounting
- Optional IR receiver for remote control
- Optional External Temperature sensor

- Optional Buttons Lock
- White or Black with optional colored frame
- °F/ °C scale
- Ambient Temperature display & reading offset
- Occupancy sensor input for energy saving
- Economy Mode
- Filter clean/replace alert with adjustable time
- Freeze Protection adjustable temperatures
- Auto Fan (fan on demand)
- Compressor Protection delay timer
- Configurable time delay between compressor stages: 0-360 sec
- Support Heat Pump configuration (Reversing Valve)
- Oil/Gas operation in Heat Mode
- Emergency Heat in HP Mode

See Wiring Diagrams and Comparison Table on pages 8-9

Special Controllers

TLC-24

24VAC, Temperature Limit Controller for energy saving. The TLC will Turns the compressor On/Off as per adjustable temperature limits.

The TLC is a simple, yet efficient Temperature Limit Controller which offers substantial energy saving of Air Conditioning by limiting 'Set Temperature'.

The TLC is compact and easy to install at any existing Air Conditioning system by connecting the compressor relay line to the TLC, the TLC overrides the Air Conditioning control system and therefore can limit the Cool/Heat set points.

Limit Cool & Limit Heat values are configurable. The TLC will **automatically** re-operate the compressor according to these values.

Field Tests showed 25-40% energy saving using the TLC-24

General Features

- Adjustable Set point limits for cooling and heating using 2 manual knobs
- Power supply 24VAC for HVAC operation
- 1A, 24VAC dry contact for compressor relay
- Random compressor delay Algorithm jumper selectable
- Easy, quick installation in any existing AC system
- TLC installation requires no modification in the existing room devices
- No change to user operation of the Air Conditioning system
- Fast Return On Investment (ROI)

Special Controllers

EC300

220VAC, energy saving controller, for Offices and Hotel rooms.

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Turns On/Off HVAC and lighting systems per presence in a room via an Occupancy Sensor and optional Contact Inputs

The EC-300 offers substantial energy saving of Air Conditioning & Lighting operation in hotel rooms, offices or conference rooms.

General Features

- Power supply 2220VAC for HVAC operation
- Detects presence based on an IR Occupancy sensor and Contact Inputs on door entry or window
- Easy, quick installation at voltage line, between an existing HVAC/lighting system and Power Supply
- Inputs:
 - IR Occupancy Sensor turns off HVAC and lighting after adjustable time (separate for HVAC and lighting)
 - 2 Window Contacts N.O. or N.C selectable
 - Door Switch special logic for hotel rooms
 - Temperature sensors

- Adjustable Set point limits for cooling and heating
- EC300installation requires no modification the existing room devices
- EC300 Controller supplies 12VDC voltage to IR sensor
- DIP switch selectable options:
 - * Hotel or Office configuration
 - * With or without compressor delay
 - * Window contact configuration (N/O or N/C)

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Air Quality

SensiCO PX300 - CO Sensor

Sensor for measuring carbon monoxide (CO) concentration

SensiCO PX 300 is a reliable sensor for measuring Carbon Monoxide (CO) concentration in **enclosed locations, such as parking garages.** When CO concentration **exceeds 50 PPM**, a signal to the ventilation system is **activated and an alarm is sent to the car park management/ control**. SensiCO PX 300 may be connected to a self-control system or to the B.M.S. (Building Management System), using its analog output

General Features

- Approval/Certification: TÜV per VDI 2053 (Air treatment systems for car parking)
- Detection principle: Electro-chemical
- Operation: Continuous
- Gas entry: by diffusion
- Measuring range: 0-300 ppm CO in air
- Reproducibility: < 3 ppm
- Response time 90: < 60 sec
- Cross sensitivity: < 2% on 300 ppm CO according VDI 2053
- Linearity: < 2% on 300 ppm CO according VDI 2053

Ange: 0:300 ppm, Voltage: 20-28 VOC
 Series 40272

- Operating temperature range: -10°C to +40°C
- Humidity range: 15 95% relative humidity, non condensating
- Signal: 4-20 mA, max. load 300Ω
- Connection: 2 wires
- Zero adjustment: Automatic, calibration free
- Sensitivity adjustment: via potentiometer
- R.F.I According EN 50 081-1 resp. EN 50 082-2 B
- Filter: For dust and water protection

Sensors& Accessories

MRSC-SUPER

Temperature-Humidity-CO2 decorative sensor with MODBUS communication

Temperature-Humidity-CO2 sensor - "All in one" for Wall Mount installation With MODBUS Communication, equipped with ALARM output (dry contact) for limit **Deviation indication and 3** separate outputs 4-20mA or 0-10 VDC (selectable by DIP switches). A simple and easily installed sensor for various HVAC applications Supply Voltage of 24VAC / VDC

Features & Benefits

- Built-in Temperature Sensor a choice of three temperature ranges:
 - $0 \div 50^{\circ}C (32 \div 122^{\circ}F)$
 - -35 ÷ +35°C (-31 ÷ +95°F)
 - 0 ÷ 30°C (32 ÷ 86°F)
- Built-in humidity sensor Humidity range is measured 5 ÷ 95 %RH
- Built-in self-calibrated CO2 sensor a choice between two ppm ranges:
 - 0 ÷ 1200 ppm
 - 0 ÷ 2000 ppm
- MODBUS communication interface over RS485 wiring
- Operating optional setting for both Low Limit and High Limit Alarm alert for each of the sensors separately; Humidity, CO2 and Ambient temperature.
- Internal light indications for communication indication and exception alert

Sensors& Accessories

Remote Control Units

Hand held remote control unit

Easy-to-use **infra-red remote-control unit**, suitable for Meitav-tec thermostats and receivers, with big LCD and a large temperature digit display.

General Features

- On/Off
- Mode selection
- Fan speed Selection
- Temperature set point
- Timer Start/Stop

- Operated by 2 X AAA battery
- Real time clock & weekdays
- °F or °C temperature scale
- Available in black or white color

TS01, TS02, TS05, TS06, RS01, RS02, DT02 Temperature Sensors

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