Communication - Open Protocols

Introduction:

What is the link between communication technology and HVAC control systems?

More importantly, how does Meitav-tec fit into this picture?

Control systems everywhere are no longer restricted to being stand-alone; rather they can now be part of larger networks where every device can communicates with one another and with the central controller. This is true for the controls of HVAC systems as well, which when communication-based, can ultimately lead to significant energy savings.

As for Meitav-tec, our expertise in providing state-of the-art solutions for any HVAC control application has now spread to the field of communication. Our units can be integrated into large, global Building Management Systems while always staying simple, affordable and approachable to all.

We invite you to keep reading…

Why Communication?

In today's high tech world, advanced technologies are the focus of every market, including that of HVAC. And when we talk about advanced technology in HVAC, the reference is clearly to one thing and one thing only; communication.

Read more (page 2)

Meitav-tec's Approach

Meitav-tec offers controllers with **BACnet and Modbus Protocols.**

Meitav-tec decided to **focus on fan coils**, machines that are relatively simple and do not require a complicated, universal controller.

We have decided instead to provide **one specialized controller for each fan coil in the building**.

Read more (page 3)

Communication Made Simple

Although communication in the field of HVAC is taking over the market, there still seems to be some skepticism.

It is time to distinguish between fact and fiction.

Read more (page 4)

Case Studies

Our communication units have been the integral part of many large building projects around the world.

The advantages they offer in terms of suitability, simplicity and cost simply cannot be beaten. Certain specific examples include the **INTERCONTINENTAL hotel in Hong Kong**.

Read more (page 6)

The Thermostats

Meitav-tec offers units for all types of **fan coil** applications, based on their specific valve outputs.

Each type of controller is available with the following protocols:

- **BACnet (2500 Series)**
- **Modbus (4500 Series)**

On/Off (Relay).……………....PS-X500-3S-FC-SUPER
0-10Vdc...............................PS-X500-P-3S-FC-SUPER
3-Wire...................................PS-X500-PM-3S-FC-SUPER
Thermal Actuator Valve.......PS-X500-TA2-3S-FC-SUPER

Read more (page 7)

In Focus

From May 4th to May 7th 2006, Meitav-tec proudly attended

Next Edition: MaxiNet

The next edition of our newsletter will feature **Meitav-tec's own**

the **ISK-SODEX HVAC exhibition** in Istanbul, together with its agent in Turkey, Muzaffer Kazakoglu.

The show was visited by HVAC professionals from all over Europe and Asia and was overall a great success. Please click below to read Meitav-tec's interview with "Refrige Portal" about the show, and for pictures from the exhibition itself.

Read article (page 8)

MaxiNet protocol.

This is a complete control system designed specifically for small to medium applications and perfect for thermostat networks.

This system is entirely Plug'N'Play and can help you save thousands on your electricity bill.

Stay tuned....

Why Communication?? Discover the Potential.......

In today's high tech world, advanced technologies are the focus of every market, including that of HVAC. And when we talk about advanced technology in HVAC, the reference is clearly to one thing and one thing only; communication.

The main purpose of communication control systems is to **save energy**, which translates into saving money!!

In every house, every hotel, every office building, the #1 energy consumer is without a doubt the climate control system (heating / cooling).
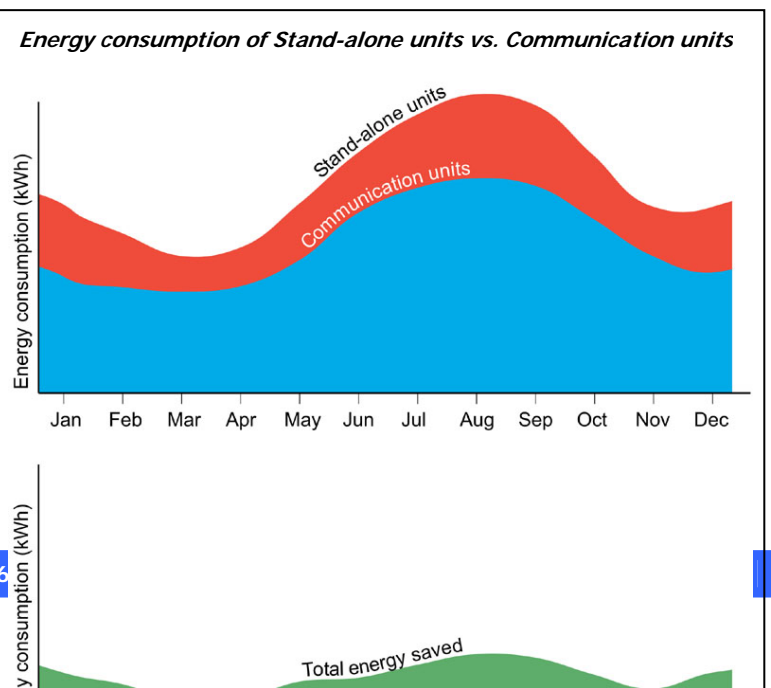
What if there was a way to significantly reduce your electricity bill?

This question is relevant in particular when it comes to commercial level, where utility bills can run as high as tens of thousands of dollars a month. Fortunately today, there is a way for building owners to take control of these sky-high prices and that is through centralized, smart and sophisticated communication controllers. This and only this, is irrefutably the KEY to reduced energy costs.

How So?

Communication systems, also known as Energy Management Systems (EMS), provide the user with the tools necessary to intelligently control when and how much energy is consumed. From a remote location, the user may view and manage for example, various inputs for occupancy sensors, window contacts and temperature sensors, as well as features such as set point limits, etc... This type of management clearly offers comfort and convenience as bonuses, but the real punch line is again the energy savings that may be achieved and the level of total control the user now has at his fingertips.

With user-friendly interfaces, Building Management Systems (BMS) are being implemented in just about every new construction project, and the notion of communication and EMS is always the focal point. We talk about the integration of various control systems, we talk about freedom for the building owner and we talk about simplicity for the system integrator. All of the above are achieved not only by implementing the correct communication systems, but also by understanding them fully.

Energy consumption of Stand-alone units vs. Communication units

Energy consumption (kWh)

Stand-alone units

Communication units

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

consumption (kWh)

Total energy saved

Meitav-Tec's Approach

Meitav-tec offers controllers with BACnet and Modbus Protocols.

Most of the big players today offer communication solutions through large, programmable controllers, where the user then defines how to make use of the inputs and outputs available. These universal DDC controllers require programming in the field, which means extra time and cost during field installation. These types of units are also very expensive since they are "blank slates" which can be used for most any application the user defines.

Meitav-tec has taken a slightly different route when it comes to communication. **We have decided to focus on the fan coils**, machines that are relatively simple and have no need for complicated, universal controllers. Instead, our solution is to offer one specialized, pre-programmed controller for each fan coil, with all the options necessary for accurate and detailed control of the fan coil.

Since each one of our controllers is provided with its' own Object List, the system integrator has in his possession all the existing points he needs to smoothly integrate the controller into larger BMS systems. With no programming or configuration of the unit required on site, the overall costs and time of field installation is drastically reduced.

In addition, since our controllers are specifically designed for fan coil applications, they can be offered at a fraction of the cost of larger DDC controllers. This gives Meitav-tec and project contractors, the price advantage when bidding for projects. Since fan coils are vastly used in any building, the controls associated with each one must be price affordable, since this is what will inevitably make up the largest financial portion of the project.

Our open protocol controllers for fan coil units are divided into four different categories, based on the specific application. They are:
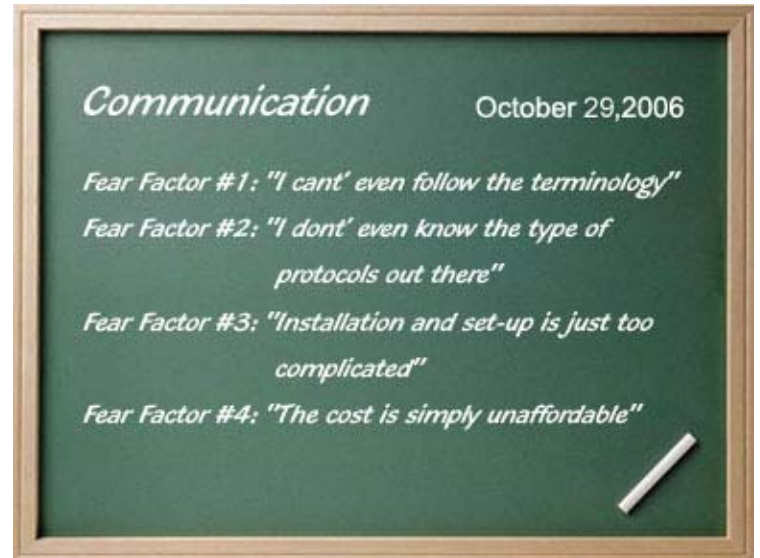
- On/Off valves

- Proportional 0-10Vdc valves

- Proportional 3-point floating valves

- Proportional Thermal Actuator valves

All of the above are available with BACnet and Modbus protocols.

Communication Made Simple

Although communication in the field of HVAC is taking over the market, there still seems to be some skepticism. From far, the notion of communication appears to be a complicated, expensive and un-approachable topic, but this is hardly the case. It is time to distinguish between fact and fiction.

Communication   October 29,2006

Fear Factor #1: "I cant' even follow the terminology"
Fear Factor #2: "I dont' even know the type of
                 protocols out there"
Fear Factor #3: "Installation and set-up is just too
                 complicated"
Fear Factor #4: "The cost is simply unaffordable"

Fear Factor #1: "I can't even follow the terminology"

Fact: The communication vocabulary contains a handful of common terms that can be easily explained. The main ones are:

- **Protocol**: A set of standard rules for data representation, signalling, authentication, and error detection required to send information over a communications channel.

- **BMS**: Building Management Systems

- **BAS** (Building Automation System)

- **EMS** (Energy Management Sytems)

- **HMI** (Human Machine Interface)

- **LAN** (Local Area Network)

- **Ms/Tp** (Master-slave/Token-passing)

- **BAC** (Building Automation and Control)

- **TCP/IP** (Transmission Control Protocol/Internet Protocol)

- **RS** (RS-485) Recommended Standard

- **EIA** (EIA-485) Electronics Industry Association

- **DDC**: Direct Digital Controls

Fear Factor #2: "I don't even know the type of protocols out there"

Fact: Protocols can be divided into different types according to the application they are designed for. Some are designed to support large, complex applications with many different types of control systems in the building, such as alarm systems, elevators, climate control, chiller controls, etc…

For such an application, protocols that are open and interoperable are probably the best bet. Since more than likely most systems are not originating from the same vendor, and still must be able to integrate with one another, a protocol that is open will be common to all, making integration both possible and easy.

Smaller applications that do not involve large, complicated controls may be good candidates for simpler, closed protocols. Such protocols are ideal for small to medium environments where a network of a single type of control exists, such as a network of thermostats only. No integration is required with other systems and it is a wonderful solution for those looking for smart communication controls, yet on a smaller scale. In this case for example, Meitav-tec offers its own Maxinet protocol to control thermostats network (More on Maxinet in the next issue of our Newsletter).

Fear Factor #3: "Installation and set-up is just too complicated"

Fact: Installation of communication units is a systematic process that does not differ much from the installation of stand-alone units. It requires becoming familiar with the hardware involved, but anyone with experience in installing stand-alone controls should have no problem when it comes to communication. In addition, companies today are making considerable progress in reducing the complexity of installing such units. Meitav-tec, for example, provides its communication units in such a way that their installation is IDENTICAL to that of stand alone units, except for 2 extra communication wires.

The bottom line is that system integrators are now so familiar with integrating the different controls of a building, that the set-up phase is no longer a significant concern and has actually become second-nature to them.

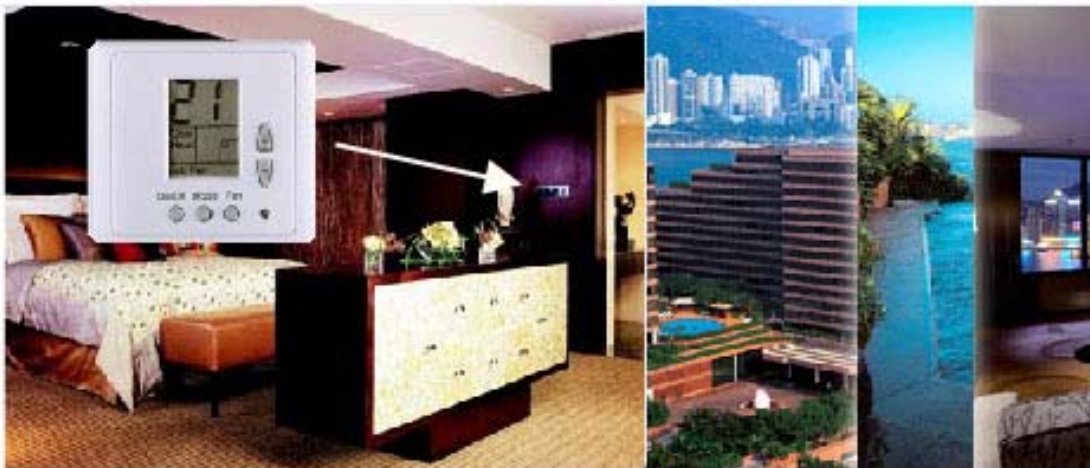### Fear Factor #4: "The cost is simply unaffordable"

Fact: First of all, communication units are not that expensive. As with all technologies, communication has become more and more common on today's market and prices are no longer what they used to be. The gap between their prices and that of stand-alone units has been significantly bridged over the last few years.

Although the initial cost of communication units is higher than the cost of stand-alone units, the energy savings attained by using these units more than justifies the price. With an average utility bill reduction of 20-30%, the ROI (Return On Investment) is so quick that the user begins to see overall savings after only a short period of time.

Case Studies

Our communication units have been the integral part of many large building projects around the world. The advantages they offer in terms of suitability, simplicity and cost simply cannot be beaten.

Certain specific examples include the **INTERCONTINENTAL hotel in Hong Kong**.

The best example perhaps, which ties in all that has been mentioned in this newsletter, is that of our agent in the UK, **Robert Wood**.

Mr. Wood started off by selling a single project to TOTAL, the UK agent for Alerton, one of the largest suppliers of DDC communication units. For this particular project, TOTAL needed an intelligent solution for the control of the fan coils and needed to offer it at an attractive price in order to be awarded the project. TOTAL then turned to Robert Wood at SCI UK for such a solution, which came in the form of our BACnet controllers.

Using Meitav-tec's Bacnet units, TOTAL not only won the bid, but also realized the immense market potential that exists when using these units. As a result, TOTAL has signed an exclusivity agreement with Robert Wood, giving TOTAL the sole distribution rights of Meitav-tec's Bacnet products in the UK. This wonderful milestone could not have been reached without the commitment and know-how of Robert.

Thank you for this outstanding achievement.
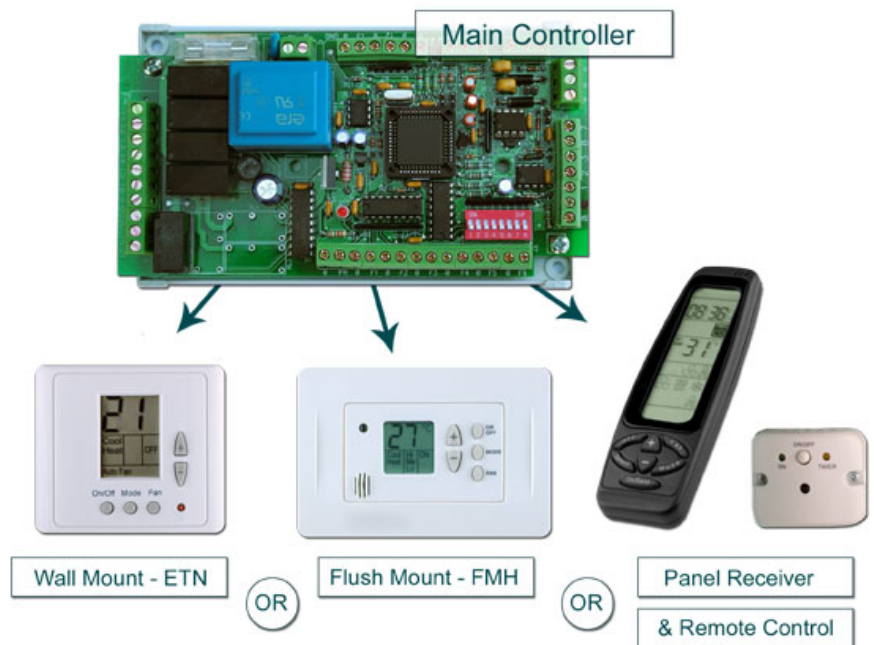
Communicating Thermostats

PS-X500 Thermostats with Built-in Communication

for Building Management Systems

An attractive, low cost, easy to install and troubleshoot, communicating thermostat with the most common communication protocols in the market today, such as BACnet, Modbus and others.

Factory pre-programming makes this controllers the best solution in the market for communicating FAN COIL applications.

Available outputs:

- o On/Off
- o 0-10Vdc
- o 3-wire - 24Vac
- o Thermal Actuators Valves

Cool & Heat Outputs	BACnet	Modbus
On/Off (relay)	PS2500-3S-FC-SUPER	PS4500-3S-FC-SUPER
0-10Vdc	PS2500-P-3S-FC-SUPER	PS4500-P-3S-FC-SUPER
3-wire	PS2500-PM-3S-FC-SUPER	PS4500-PM-3S-FC-SUPER
Thermal Actuator Valves	PS2500-TA2-3S-FC-SUPER	PS4500-TA2-3S-FC-SUPER

*All the datasheets are available at www.meitavtec.com

An exclusive interview to Refrige.com at the ISK-SODEX HVAC exhibition in Istanbul

Meitav-tec is an Israeli company founded 10 years ago and actually considered one of the leading companies in the manufacture of "intelligent" electronic thermostats in the world. During its participation in ISK-Sodex, which was held in Istanbul, Turkey, from the 4th to the 7th of May, Meitav-tec gave Refrige.com an exclusive interview, where the company talks about its new line of communication products and how communication systems are the best way to save energy, besides being the main issue facing the industry today.

1- For Meitav-tec, what is the importance of being present in this particular fair (ISK-SODEX 2006)?

The ISK-SODEX show is quite a significant HVAC exhibition and Meitav-tec considers it to be a wonderful exposure opportunity. Together with our agent in Istanbul, Muzaffer Kazakoglu of Ges-Teknik, our aim throughout the exhibition is for our products and our company to gain as much visibility as possible.

Ges-Teknik is an extremely well-know and well-connected provider of HVAC solutions in Turkey, and we see no better way to reach people and introduce them to Meitav-tec, than exhibiting our controls with someone as well connected as Muzaffer Kazakoglu.

2- What is the importance of the Turkish and Eurasian market?

Geographically, Turkey is the meeting point of both Europe and Asia, making it by default the epicenter of the Eurasian market. Turkey boasts an impressively large number of HVAC manufacturers in the world, and last year alone, sold close to 1 million split unit air conditioners. Turkey is also home to hundreds of agents, representing some of the biggest companies in the field, such as Carrier, Johnson Controls, etc...

Turkey is one of the fastest growing HVAC market in Eurasia, and its potential today is considerable. With an emphasis being placed on expansion, technology advancement and smart solutions, HVAC professionals everywhere are starting to look to Turkey for the next up and coming trend.

3- What are the new products that the company presented at the fair?

Meitav-tec firmly believes that the wave of the future in HVAC is actually already here; communication. This was confirmed at the ISK-SODEX show, by listening to leaders in the field discuss the subject and come to the same conclusion over and over again; energy savings through communication systems is the main issue facing the industry today.

As a result, Meitav-tec, with Ges-Teknik was proud to have on display its own communication solutions and be able to educate visitors about the amount of energy savings they can achieve with units as simple and as smart as ours.

Our line of communication products is divided into 2 groups- open protocol controllers (that know how to speak BACnet and Modbus) and our own, in-house Maxinet protocol controllers.

Our open protocol controllers for fan coil units can subsequently be integrated into large BMS systems, at a fraction of the cost of larger DDU controllers. They offer customers the detailed control they require, without having to program or configure the unit. Each unit is already pre-programmed and is provided with its' own Object List, giving the system integrator all the existing points he needs to smoothly integrate it into the larger application. This minimizes the overall costs and time of field installation.

On the other hand, the Maxinet system is designed for small and medium applications, where a network of thermostats control the biggest energy consumers in any building; the air conditioners. Providing features such as set point limits, weekly program and history

graphs, the Maxinet offers the user all the necessary tools for him to achieve the maximum decrease in energy consumption, by intelligently controlling the thermostats. In addition, the RS-485 connections and the easy, plug'n'play software make installation and setup extremely simple and user-friendly.

4- For this year, what is the company's marketing strategy? Is Meitav-tec planning to participate in more fairs?

This year, Meitav-tec plans to uphold its momentum from 2005, continuing to move towards more intelligent control solutions. We want to move away from the low-cost far-east approach, and detach ourselves as much as possible from this market. We plan to target more and more OEM's, offering them smarter, more advanced control systems that can perfectly complement their own equipment.

In terms of products, our focus is clear; technologies such as wireless communication and communication through TCP/IP protocol are taking the HVAC world by storm and Meitav-tec plans to be in the middle of it. We are in the final stages of development for these two products, and a beta version was already displayed at ISK-SODEX 2006.

In spite of the increasing globalization happening around us, we are aware that each market is unique, with characteristics of its' own. Since our goal is to cater to each market's specific needs, Meitav-tec has attended several other large exhibitions since the beginning of 2006; ASHRAE (Chicago), MostraConvegnoExpocomfort(Milan) and now ISK-SODEX (Istanbul).

5- Was Meitav-tec present in ISK-SODEX 2004? What were the results brought by the company?

Yes, Meitav-tec attended ISK-SODEX 2004, again with our agent Ges-Teknik. The results of the previous show were above and beyond our expectations; visitors were literally lining up outside our considerably small booth. The exposure our company and our products received helped spread the word about us in and around the Turkish market, bringing new customers such as Johnson Controls Turkey and Alarco.

This year, we decided to upgrade to a larger, more visible and more accessible booth, in order to keep up with the stable growth that we have been experiencing since the 2004 show.

6- What does the company expect to bring from the ISK-SODEX 2006 show?

The 2006 show allowed Meitav-tec to closely re-evaluate the Turkish HVAC today as opposed to 2 years ago, and to see first-hand the significant growth it has undergone since then. We were able to recognize and pinpoint some specific areas of the market that are still untapped by Meitav-tec. Areas such as Air Handling Units for example is a niche with significant potential which we have to further explore. We do in fact have a suitable range of products for this application, one of which was on display at the ALDAG booth. One of ALDAG's AHU's (the famous ALDAPOOL), used for swimming pool environments, uses both Meitav-tec's own M5001 combined temperature and humidity controller and Meitav-tec's GHU duct sensor. We are also able to offer a more sophisticated unit, the SPL2000 which can be suitable for a large number of other AHU applications.

This type of application will be a key focus point for us over the rest of 2006.

Finally, in keeping with the general trend of the exhibition, we will continue developing and pushing our communication systems. As many of the experts in the field confirmed in Istanbul, open protocols are forming the face of HVAC communication, and when it comes to BMS, the key players are slowly moving away from closed, proprietary protocol. A good example is LONworks, one of the leading protocols that is slowly losing popularity because of its high royalty prices.

Meitav-tec also plans to continue to nourish existing relationships in Turkey and form new ones, always with Ges-Teknik as our stable partner. The high interest showed regarding our "avant-guard" solutions (wireless communication, TCP/IP, integration of multi-zone controllers with Maxinet communication) make us confident that this year and next will be particularly fruitful in Turkey and beyond.