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## Modbus Conformance Certified...

Two new products have been certified as conforming devices by the Modbus Organization. Ohio-based Seekirk Inc. specializes in annunciator products that provide site monitoring and alarming to power generation utilities and a growing list of industrial processors and plants.

[Seekirk's Model A2100 Annunciator](#) was tested to the Modbus Conformance Test Specification V3.0. This annunciator is a 12-point Modbus/DNP/standalone annunciator designed for monitoring alarm conditions in transformers, switchgear,

breakers, or in any processing equipment or control room applications, either attended or unattended.



*Annunciator A2100*

The [Hölscher + Leuschner Model LI67 I/O module](#) was certified earlier in September. Hölscher + Leuschner GmbH manufactures electronic equipment for climate and feeding technology, computer control,

programming and evaluation for livestock farms.



*Model LI67 I/O Module*

[Find out more about conformance testing](#) on the Modbus website, where you can download the test specification and test submittal forms.

## Modbus + KNX + Helvar + Crestron...

Integrating Modbus with other protocols is absolutely necessary for some projects. Customers want to use multiple vendors of their own choosing and won't take "No" for an answer, despite the effort required to tie the systems together.

Nabuurs, an installation company in Boxmeer, the Netherlands, faced this challenge when automating an office building for Rabobank Land van Cuijk & Maasduinen, a major bank in the Netherlands.

The project required a complete integration of Modbus, KNX, Helvar, and Crestron.

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# Meet Our Members...

**SELETEC srl** designs, manufactures and markets modular electronic and electrical equipment for medical and laboratory, energy, water and sanitation, and industrial markets. The company is headquartered south of Milan.

Selectec's wide array of product offerings includes devices, such as medical and technical gas alarms, pumps and compressors, gas detectors,

cryogenic probes, and a variety of electrical panels for weighing systems, pumps and compressors, and oxygenation detectors and alarms.

The eMAS.eVo, (pictured right), is one example – a universal medical device for pressure control on medical gas pipeline systems. The eMAS.eVo is a single device for alarms in clinical emergencies, whether in the operating arena or emergency department. Device configuration does not require a PC.



**eMAS.eVo (e5616)**



*Joining the Modbus Organization is easy and affordable. Download the membership application to learn more.*

Based in Goteborg, Sweden, **PiiGAB** develops, markets, and sells software and hardware for data communication, data acquisition and tracking, for use in both industrial settings and in building automation.



**Proportion-Air, Inc.** is a manufacturer of electronic air pressure regulators and air flow control valves.

Proportion-Air's QBT, QPV, and QB3 series of pressure control valves are equipped to communicate via Modbus Serial. Devices have a choice of four baud rates, which are selectable with DIP switches.

The company's products are

designed to address applications dealing with:

- Flow;
- Force;
- Position;
- Pressure;
- Tension;
- Torque; and
- Vacuum



The company's M-Bus 900 is a gateway/converter developed for remote reading of M-Bus meters. Remote reading can be done using a local network, city network, Internet, serial communication or using an existing M-Bus master.

It is also possible to parallel connect a Modbus client to read values from an M-Bus meter to a PLC/DUC or to view values on a local display.



**M-Bus 900**

# Modbus + KNX + Helvar + Crestron...

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Each of the automation systems was planned for a defined task:

- Modbus — for controlling the heating in the office building and displaying errors and warnings from the HVAC system;
- KNX — for default lighting in areas such as the kitchen and basement and for controlling the shutters and screens;
- Helvar — for lighting the workplaces of 180 employees, using daylight-controlled devices; and
- Crestron — for the multi-room audio, beamers, and projection screens.

All of it was to be controlled from two Touch PCs, so that different staff members on different floors could control the complete installation. Touch PCs were also to display alarm messages, including warnings from the MIVA toilets (specialized toilets for disabled individuals).

The integration problem was solved by using the iRidium mobile software package, with a full site license for all protocols.

The main challenge of the project was to create a bridge between KNX and Helvar. Normally a special hardware

device is used for this purpose, but in this installation iRidium Script was used to build the bridge.

The resulting solution provides the desired variety of automation equipment in the Rabobank office building controlled from:

- Two Touch PCs (more can be added if necessary)
- KNX Touchscreens (Zennio Z38i) in the consulting rooms; and
- KNX switches in the hallways.

Programmers at Nabuurs learned the iRidium system and programming to provide this unique integrated solution. The result: a happy customer whose needs have been met!

Learn more about [iRidium mobile](#) and its worldwide network of integrators.



Customers want to use multiple vendors of their own choosing and won't take "No" for an answer, despite the effort required to tie the systems together.

## News from Modbus Members...

### ProSoft's Four New Gateways

Need to connect PROFINET and Modbus devices? [ProSoft Technology](#) has four new gateways that help users do just that.

All four gateways enable bi-directional data transfers. The gateways support disaster recovery through an optional SD card, allowing for configuration recovery if an issue arises. These gateways join ProSoft's PLX30 family of gateways, which also includes the EtherNet/IP™ to PROFINET Device Gateway.



### AMCI Expands SMD Product Line

[Advanced Micro Controls Inc.](#) (AMCI) released a significant expansion of their SMD (stepper+motor+drive) product family that includes DLR topology, SynchroStep™ technology, IP67 rated versions, gearboxes, NEMA size 23 and 24 packages, and compatible cord sets. This latest release provides a comprehensive solution for a variety of motion control applications.

AMCI's SynchroStep™ technology enables coordinated motion control between the SMD Series integrated motor and Allen-Bradley servo systems.

The SMD-Series integrated motion adds fault-tolerant DLR topology and an embedded Ethernet switch, providing direct SMD-to-SMD cabling without the need for external switches.

Compatible with PLCs and PACs that support EtherNet/IP, Modbus TCP, or Profibus, these integrated motion packages interface with many PLCs including those from Rockwell Automation, Siemens, Omron, and Schneider.



# Q&A from the Modbus Discussion Forum

## RS485 Modbus Slow Response ...

### Onionsjk had a problem:

I am trying to establish two RS-485 Modbus communications between Siemens (417-H CPU) and Yokogawa DCS (ALR121) which can take up to two connections. Siemens side two CPUs and Yokogawa side one card and each connection is by two wire.

What I am witnessing is: if I test individual connection (one connection to ALR121), both communications are fine. Within 1-2 seconds signal reach each other. Whereas when I make full connections (two connections to ALR121), there is 5-10 sec signal delay and some signal gets lost.

Each connection has the same address scheme with different slave ID. Connection parameter used is parity = none, data bit = 8, speed = 19200. CPU loading of DCS side is lower than 40%.

Can someone tell me about the maximum data one ALR121 card can take? Or something about cyclic update mode? What other parameter can [you] think of?

### oneye14 answered:

You have not clarified, but I'm guessing what you define as "full connections" is two Modbus masters and two Modbus slaves on a single RS485 local network.

If this is the case then you may have two masters attempting to take control of the 485 network. The probable result is that both may detect data collisions, abort transmission, then timeout a silent listening period awaiting the other to finish.

### ICP DAS replied:

Two master connections are not allowed on a single RS-485 bus. You will get data collisions and what appears to be slow response time. We have a device that allows two master devices to talk to devices on the same RS-485 bus. Our TSH modules buffer requests

from two masters so that only one is communicating at a time.

### Lynn Linse shared:

A quick scan of the ALR121 documents shows one needs two cards for two connections. So to allow two masters, or even two redundant connections to one master, you'll need Yokogawa cards.

[Read more or add your comments](#) to this thread.

## Modbus TCP/IP client for IPv6 ...

### James Clark contacted the forum:

I'm looking for a Modbus TCP/IP client, similar to ModScan, that will support IPv6. Does anyone know if one exists?

### Frank O'Gorman replied:

Our products ModMaster (<http://wingpath.co.uk/modbus/modmaster.php>) and Modsak (<http://wingpath.co.uk/modbus/modsak.php>) support IPV6.

Editor: If anyone else is aware of Modbus software that supports IPV6, [add your comments](#) to this thread.

## Auto Slave Address Detection in Modbus by Master ...

### Sreenivas posted this question:

Can any one please suggest a way for auto slave address detection on Modbus by a master on both TCP and RTU.

Thank you in advance.

### tallgirl offered:

There are three different strategies I've used -

1. Start at 1 and just keep going, until you either find the device you want, or reach the maximum unit number you want.
2. Define specific ranges for various device types and limit your search to those ranges.

## The Modbus Community

- Technical discussions
- Knowledge aggregation
- Contact with Modbus users

supported by...



3. Use 1 or 2 and save the results so you don't have to repeat, unless the devices weren't found again.

Modbus slave discovery is a pain if you're trying to do it automatically. The only thing worse is device type discovery, as many products on the market don't include either REPORT SLAVE ID or READ MEI in their command set.

### Carlo added:

If you know what the device is, you can read a register that has a unique and static value (if it has any). I have a pool of six devices that I identify this way. Registers that contain strings such as model numbers are good to use for this.

[Read more or add your comments](#) to this thread.

## Posting Messages on the Modbus Discussion Forum is Easy ...

[Post your question](#) on the Forum and connect with other Modbus users and developers. Check out the [guidelines](#) for asking and answering questions, and you're on your way.





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### The Modbus Organization Mission

The Modbus Organization, Inc. is a group of independent users and suppliers of automation devices that seeks to drive the adoption of the Modbus communication protocol suite and the evolution to address architectures for distributed automation systems across multiple market segments. Modbus Organization also provides the infrastructure to obtain and share information about the protocols, their application, and certification to simplify implementation by users resulting in reduced costs.

# Modbus Resources

## Modbus Q&A...

The Modbus Community is the premier on-line engineering discussion forum. Sponsored by the Modbus Organization and supported by Control.com, check out Q&A from the [Modbus Community](#) website or log-in and have the threads you want emailed directly to you.

### The Modbus Community

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## Modbus conformance certification...

The Modbus Conformance Testing Program provides independent verification that a broad array of qualifications has been met in compliance with Modbus specifications. It provides verification that a device's design and configuration process will proceed smoothly and that products were developed in accordance with key Modbus criteria. [Learn more...](#)

## Looking for the Modbus specifications and implementation guides?

The Modbus specifications and guides for implementing Modbus over serial line or Modbus TCP can be downloaded freely from the Modbus.org [Technical Resources page](#).

## Order the Modbus TCP Developer Toolkit

The Modbus TCP Toolkit provides all the necessary pieces to develop a Modbus TCP/IP-compliant device, including documentation, diagnostic tools, sample source code, and pre-test software to prepare for Modbus conformance certification.

[Learn more...](#)

