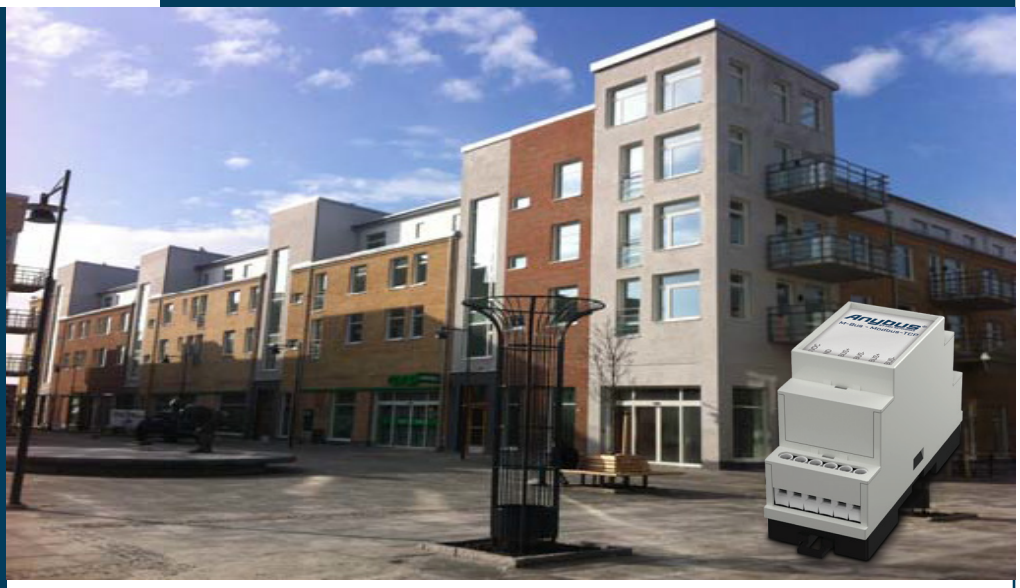
Anybus® BY HMS NETWORKS

Case study:
Building automation

Solution: Anybus M-Bus to Modbus-TCP gateway

Country: Sweden

Company: Processcomponent AB



Effects:

- Communication enabled between M-Bus and the OptoEMU
- Real-time access to temperatures, energy consumption and water consumption

"With the Anybus M-Bus gateway we can set things up in 10 minutes!"

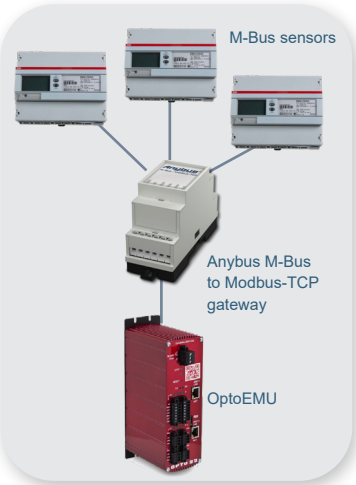
Jonas Karlsson
Sales Manager
Processcomponent

M-Bus sensors connected in 10 minutes!

Processcomponent in Sweden uses the Anybus M-Bus to Modbus-TCP gateway to quickly connect M-Bus sensors to the OptoEMU Energy Monitoring System. This provides building owners with real-time data from their buildings so they can do monitoring, logging and invoicing.

A modern building is not only built of concrete, wood or steel, it is also an intricate digital network linking together systems for cooling, heat, water, electricity etc. A common problem for building owners and system integrators is that not all systems and machinery can communicate with each other.

One example is sensors for heat, water, temperature, energy etc. Sensors and meters often use the M-Bus protocol which cannot be understood by central system controllers which often communicate using networks such as for example Modbus-TCP.



This exact problem is what faced Swedish system integrator Processcomponent AB as they were installing a monitoring system in an apartment building in Gothenburg. The system gathers data from 72 apartments, a grocery store, and the central HVAC system. All around the building, there are sensors for temperature, energy and water. The problem was that the sensors communicate via M-Bus and the energy monitoring system — the OptoEMU from Opto22— uses Modbus-TCP.

To solve this communication issue, Processcomponent found the Anybus M-Bus to Modbus gateway from HMS Industrial Networks. The gateway decodes M-Bus telegrams and maps them directly to Modbus registers. This way, the sensors can be understood by the OptoEMU and their values show up directly.

OptoEMU — a powerful solution for energy monitoring

Processcomponent has been very successful in installing the OptoEMU – an Energy Monitoring System (EMU) which collects energy data from buildings, electrical subpanels, and individual equipment like chillers and compressors. The OptoEMU delivers the data so users can view it online and use it in a business application and do invoicing for example. Users can also get alarms whenever certain levels are reached.

Quick and easy access to M-Bus data

"What I really like about the Anybus M-Bus gateway is that it is very easy to use and quick to install," says Jonas Karlsson, Sales Manager at Processcomponent. "All M-Bus sensors are automatically detected by the gateway without you having to do any configuration. This saves a lot of time since you don't have to configure each meter individually — they all show up automatically, complete with serial number, name, and all current values. Indeed, you don't even have to be on site as long as you have someone connecting the wiring from the sensor to the gateway. Before, it could take several hours to configure a single meter running M-Bus. With the Anybus gateway we can set things up in 10 minutes!"

How it works

"The actual process is quite easy," continues Jonas Karlsson. "You do a search for available M-Bus sensors connected to the gateway, and you get back Modbus registers from the sensors. These can be interpreted by the OptoEMU and provide the customer with real-time data from the sensors."

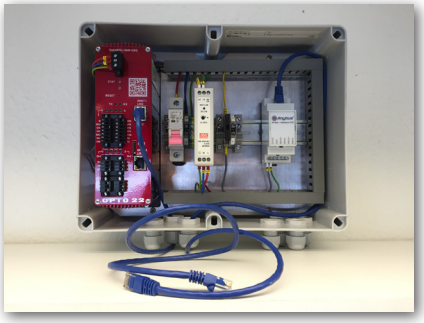
The configuration is handled in a web-based configuration tool which allows users to set up the gateway in a web interface.
No programming is necessary.

The results

The building in Gothenburg is now equipped with Anybus gateways connected to two OptoEMU-DR2 – one for the 72 apartments and one for the grocery store. The measured values can be logged to an Excel file which can be downloaded via FTP. The readings can also be sent directly to an SQL database or to HMI/SCADA systems via an OPC server.

Since the building owners now have access to real-time values from the different apartments in the building, they can be on top of consumption and get alarms when certain thresholds are reached. Access to meter values also enable rapid and automated invoicing to apartment owners.

"The Anybus gateways have certainly made life easier for us and our customers" finishes Jonas Karlsson at Processcomponent. "By getting M-Bus values into the OptoEMU quickly and easily, we can get our monitoring system up and running faster which is beneficial for both us and our customers."



The Opto 22 controller to the left and the Anybus M-Bus to Modbus-TCP gateway to the right.

Value	Scale	Unit	Cycle	User label	Description	Register
			0			10
44481574	1×10^+0	None			Fabrication	20
0	1×10^-1	m^3			Volume	30
0	1×10^-1	m^3			Volume	40
0	1×10^-1	m^3			Volume	50
0	1×10^+3	Wh			Energy	60
0	1×10^+3	Wh			Energy	70
0	1×10^+3	Wh			Energy	80
0	1×10^+3	Wh			Energy	90
0	1×10^+3	Wh			Energy	100
0	1×10^+3	Wh			Energy	110
0	1×10^+3	Wh			Energy	120
0	1×10^+3	Wh			Energy	130
6	1×10^-2	m^3			Volume	140
10	1×10^-2	m^3			Volume	150

All meters and their current values are detected automatically by the Anybus gateway. This makes it possible to get exact values at any time in a PDF file.

Learn more on www.anybus.com or www.processcomponent.se

The Anybus M-Bus to Modbus-TCP gateway allows M-Bus devices to communicate on a Modbus-TCP network. The gateway decodes M-Bus telegrams making it possible to map meter values to Modbus registers. This enables central control and supervision of measuring devices which usually use the M-Bus protocol.