

# EasyIO<sup>®</sup>

product catalog

the rules

have changed



HTML5 FG LIBRARY TCP/IP SMART HISTORIES  
DATA SHOULD FIND YOU WEB CPT M2M OPEN CONTROLLER  
PUSH CHOICE OPEN SOURCE LIKE POWER  
CITIES FREELY PROGRAMMABLE MASSIVE APPLICATION IFRAME TECHNOLOGY  
FIRST CLASS WORKBENCH BUILD YOUR OWN DRIVER  
GRAPHICS SI 30P CLOUD EMBEDDED GATEWAYS DATA TRANSPARENT  
WEB SERVICES AWESOME GRAPHICS SMALL BUILDINGS KITS SUPPORT  
BACNET EXPERIENCE SMART DIVIDE BUILDING CONTROL  
COMMUNITY CAN DO ENOCEAN METERING ALARM  
BENEFIT PARTNER OPEN ONLINE INFORMATION BYOD  
TCOM GUIDES FW QUALITY  
MODBUS SOFTWARE PRESENTATIONS  
ENERGY SAVING INTERNET OF THINGS  
MINDSET MOBILE FRIENDLY DEVELOP TOGETHER  
WEB BASED CREATES NEW OPPORTUNITIES  
EMBEDDED PROTOCOLS COST EFFECTIVE SENSORS HVAC  
SAVE ENGINEERING TIME GLOBAL COVERAGE BEMS TRAINING WIFI  
WIRELESS POINT TO POINT GATEWAY ACTUATORS ETHERNET  
SYSTEMVIEW SD CARD HAYSTACK  
INTEGRATION MADE EASY SOX IN CONTROL OF YOUR ENERGY  
GAME CHANGER FC CONTROLS  
OEM TECHNOLOGY EASYSTACK FREEDOM  
NO ADDITIONAL LICENCES RETROFIT PHP  
BMS IN A BOX E-MAIL SIMPLE SOLUTIONS BEAST

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*low costs, high energy savings,  
less devices and software, multiple protocols,  
easy integration and wireless are key*

## About us

Are you looking for an easy, cost saving, energy saving, environmental friendly and revolutionary Building Energy Management System (BEMS)? Look no further. You just found your solution: EasyIO. The rules have changed.

EasyIO provides innovative products for BEMS's, that are used in huge infrastructure projects and are perfect for all types of buildings, from very large to smaller types of buildings or estates of buildings. Our controllers significantly lower the software costs of BEMS's, because they can combine multiple protocols like Sox, BACnet, Modbus, EnOcean and Web API. The many energy saving possibilities of our products, the easy way of installing them into a new or existing BEMS and maintaining them, the use of less devices and less software in a BEMS and the wireless possibilities of our products, also lower the costs, for system integrators as well as building owners. All this means a major paradigm shift in energy controls.

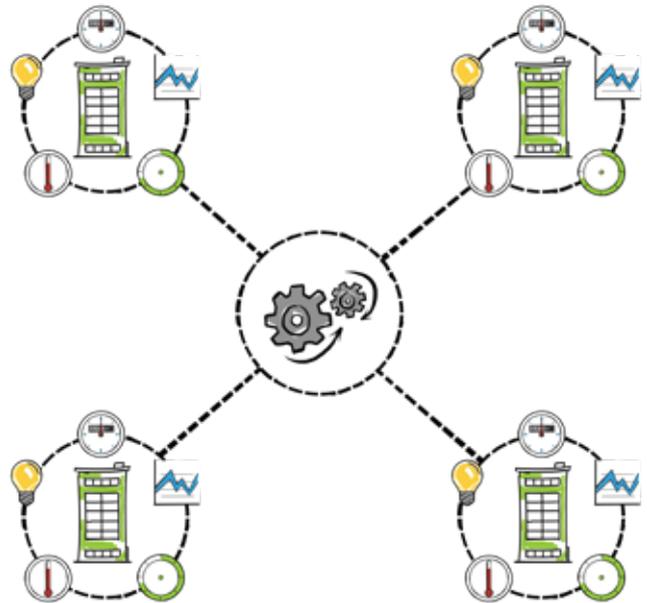
### *the rules have changed*

#### **In control of your BEMS**

With EasyIO you get back in control of your BEMS. The use of a free engineering tool (CPT), standard drivers and open source technologies, and the power of EasyStack and the Niagara Framework make that possible by providing maximum interoperability, integration and flexible interface options. Start with smart monitoring your energy consumption; control, analyse and optimise it and save energy and limit carbon dioxide emissions right away.

#### **Mission**

The goal of EasyIO is to deliver BEMS's that increase the well



being of humans: more comfort, more savings, better buildings. For many years now we are serving the professional BEMS market with close to 100% support satisfaction. Not only leading in technology, but also in partnership. Our partners are our most important product. With our partners we have created a community of professional engineers that will never let you down.

We are the 'can do' company and will never disappoint you. Trust, quality, people development, solid business ethics and leading edge innovation are our five core values.

## The people behind EasyIO

**Johan Schakenraad** is the owner and Managing Director of EasyIO Europe, with registered offices in the Netherlands and the United Kingdom. He defines the strategic policy of the company and makes sure that the company goals are achieved.

Johan has a proven track record in leading functions in the building automation industry. Because of his wide education and never lasting energy, he made the foundation and growth of leading companies possible.

All those years of experience in the industry, led to a unique vision. And with the foundation of EasyIO Europe in 2011, Johan chose a new direction: creating a company that distinguishes itself from the competition, by doing things smarter and making sure its customers get a stronger position in the industry and deliver more quality. Trust, quality, people development, solid business ethics and leading edge innovation are the five



Johan Schakenraad

core values the Dutchman personally stands for. His goal is never to be the biggest, but to be the best. In Johan's opinion, small customers are as important as big ones. By bringing people with strong specialisms into the company, he made it possible to achieve great things with just a small group of people. He's never afraid to go against the grain, because he believes things can be done different.

**Gordon Chan**, is the co-owner of the EasyIO Group, with Mike Marston. Gordon heads up the operations for EasyIO, and is based in Kuala Lumpur at the EasyIO HQ and R&D Center.

He started in the building automation industry in 1989 using the Barber Coleman Network 8000 system, which he still claims today was an awesome BMS solution. He also studied electrical engineering at KL University, achieving tertiary qualifications, and over the years has been stationed in Singapore and Malaysia, with regular visits to Europe, USA, China, Hong Kong and Australia.

Gordon started his career at Mecomb Malaysia, a division of Sime Darby, in KL and Singapore. He later became the Engineering Manager at Metronic Engineering in KL and successfully executed huge and complex building automation projects for government and the private sectors. At EasyIO Gordon has built up a solid projects business called EasyIO Engineering, a division of EasyIO Holdings, in the Malaysian market. The projects completed and currently in are huge, challenging, complex, and large.

Throughout his 28+ years of experience, Gordon has become known for his leadership and organizational skills, at the same as being firm and fair. Gordon continues to drive the EasyIO businesses forward, always looking forward to the fu-



Gordon Chan

ture with positive attitude and encouragement for his team, and the good of the company, its customers, its people and their families.

**Mike Marston** (55) founded EasyIO in year 2000 and today he is the co-owner with Gordon Chan. Mike heads up the sales operation for EasyIO, and travels often to see our customers throughout the world, spanning 40+ countries.

He started in the building automation industry in 1979, at the same time studying electrical and electronics engineering at Leeds Metropolitan University and over the years has been stationed in Saudi Arabia, UK, Australia and Asia. Starting with Satchwell Controls in the UK and then moving on to ISS Clorius, GEC Australia, Invensys and Tridium.

Throughout his 35+ years of experience, Mike continues to learn, and also strives to be innovative with disruptive technology and endless drive to improve control systems in terms of cost, simplify and effectiveness to change the world in terms of energy savings, building comfort and operational excellence. EasyIO is now at the forefront of building controls innovation and continues to 'run faster' to keep ahead, this is Mike's motto and basis for moving forward without fear.

Mike looks forward to many more years with EasyIO, changing the world and growing the company.



Mike Marston

## Partner Program

We want our partners to be successful and provide high-level quality to the customers. That's why we introduced our EasyIO Partner Program, which contains great advantages:

- **Free training in CPT Tools & the F-series**  
During our CPT Tools & the F-series training you will learn how to work with CPT Tools and how to program our F-series controllers.
- **Free unlimited support**  
When you encounter problems our support team will help you fix them. The support is always free, no matter how many times you need it.
- **Free CPT Tools**  
CPT Tools is your engineering tool that does everything... and more.
- **Free software updates**  
We continuously update the software that runs on our products. As a partner these updates are free.
- **Free annual workshop**  
Handy to update your knowledge on CPT Tools & the F-series and EasyStack, but also ideal to learn about new features.
- **Special partner multiplier based on annual sales**  
The more EasyIO products you sell, the better your price will be.
- **Your company logo on our products (optional)**  
Because your brand is everything, we offer partners the option to have our full product line labelled with their company logo.

We are continuously looking for system integrators, resellers, distributors and OEM's that are willing to become our partner.

### Partnerships

There are two different forms of partnership: EasyIO Certified Partner and EasyIO Certified Knowledge Center. Both profit from the benefits mentioned before, only the Knowledge Center also allows the use of our innovative EasyStack program.

### Why?

Although we recognize the intimate relationship between profitability and quality, we know that our partner's success is ultimately depending on the well-being and innovative character of its engineers. We want to develop a successful, long term, strategic relationship based on achieving best practice and sustainable competitive advantage.

### Training

To be successful as a partner and provide high-level quality to the customers, training is needed. EasyIO provides trainings and workshops to keep the knowledge of our partners at the highest level. You can read all about training on the next pages.

### Open source

EasyIO recognises that open building solutions combined with an efficient and easily understood engineering framework is crucial for in-house engineers and building owners. That's why we market an, already proven, open source technology.

### Register as partner

If you're interested in becoming an EasyIO Partner, please get in contact with our Sales Department via [sales@easyio.eu](mailto:sales@easyio.eu).



## Training

The importance of training cannot be underestimated. You need to know how to work with the EasyIO hardware and software if you want to provide high-level quality to your customers and achieve success. To help you with that, EasyIO offers trainings:

- CPT Tools & the F-series (free for partners)
- EasyStack
- Niagara AX & N4

The trainings are the best way to get to know how to work with the CPT tool and the F-series, EasyStack and Niagara AX & N4. Besides that, the trainings are fun and a great opportunity to meet our team. On training days, lunch is included.

Please note that all training courses are in English.

### Locations

We offer trainings almost globally: in our professional training center in Gemert, The Netherlands, but also in the

United States, Australia and Asia. It's even possible to organise a training on site.

### Easy traveling

Traveling to our professional training center in Gemert is easy. The airports of Eindhoven and Weeze are close to Gemert and offer cheap flights. If you land on one of those airports, we will pick you up and bring you to Gemert. We can also offer you a special deal for a very nice hotel near our location in Gemert (depending on availability).

### Registration & training dates

If you want to know when and where our trainings take place, or if you want to register for a training, please get in contact with us via [training@easyio.eu](mailto:training@easyio.eu) or check out the training section on our website [www.easyio.eu](http://www.easyio.eu).



## CPT Tools & F-series training

We know that our partners always want to get the best out of the products they buy. That's why we encourage training. With this training you really get to know CPT Tools and the EasyIO F-series and that contributes to providing the high-level quality you want to your customers.

The CPT Tools & EasyIO F-series training consist of:

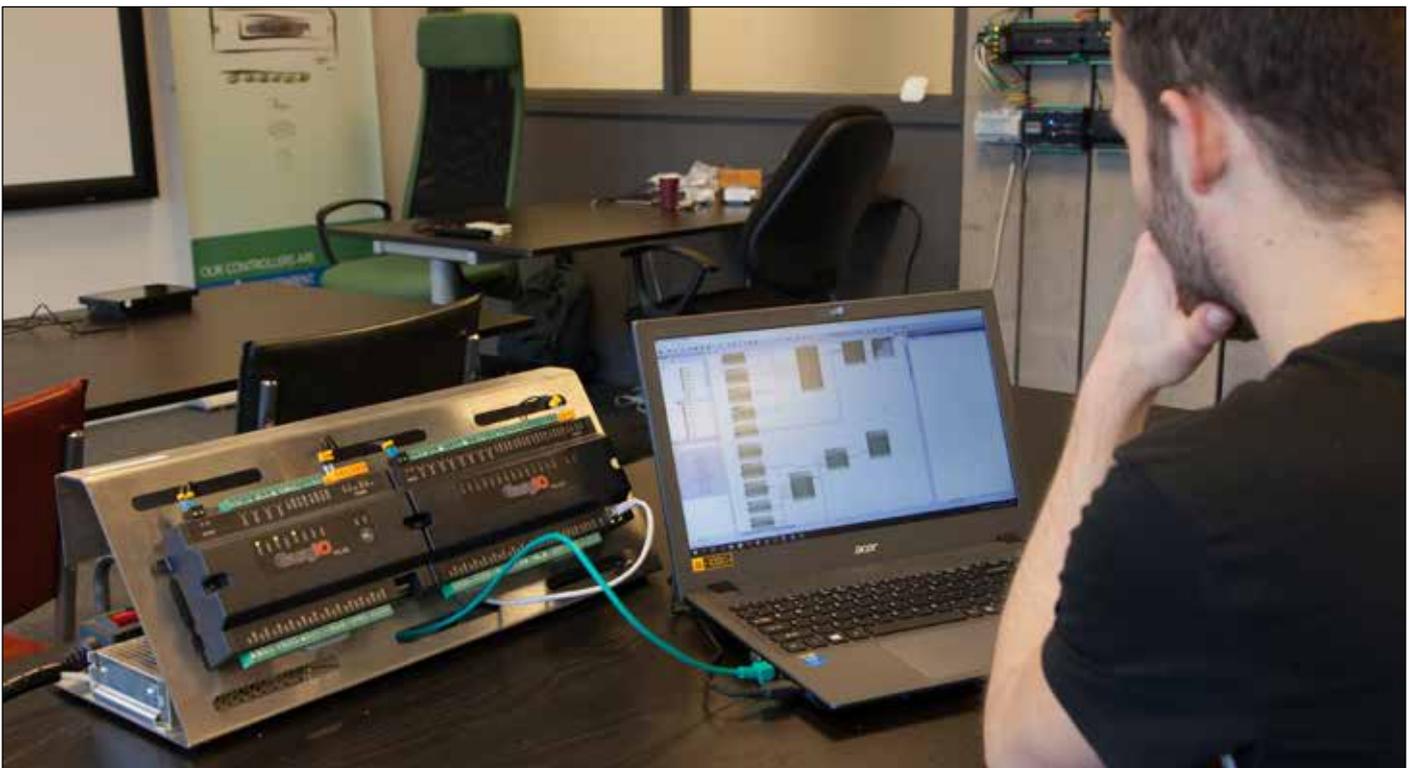
- **Introduction**  
You cannot take advantage of our products if you don't know them. This introduction shows our main products to you and explains how our EasyIO F-series works.
- **Sedona Basics**  
Sedona is the open source programming language. that provides third party configuration and management tools for products that run in the Sedona environment. It is designed to make it easy to build smart.
- **CPT Tools Overview**  
CPT Tools is an open source software programming tool that provides third party configuration and management tools for products that run in a Sedona environment. CPT Tools has the ability to configure and manage the web server on the EasyIO F-series.
- **Kit Management**  
Kit Management in CPT Tools is used to manage the Sedona kits in a Sedona controller. The Kit Manager will display all the kits that are installed in the CPT Tools Sedona folder or in the Sedona folder selected.
- **Build Sedona Control Programs**  
This topic consists of building simple AHU control ap-

plications, like for ventilation, temperature, mix damper (CO2 control) and water production (heating and cooling).

- **Create your own library**  
CPT Tools allows you to create a template library for future use. This feature reduces Sedona programming time. You can also create libraries for graphics.
- **HTML 5 Graphics pages for web browser**  
Create multiple graphics pages in the EasyIO F-series for the Sedona control programs that were built earlier.
- **Charts**  
The SQL Lite is capable of storing history into tables and columns. SQL Lite table data can be displayed in CPT web graphics.
- **Backup Management**  
The CPT Tools web server has another option for 'backups and restores' of the Sedona application. This option backups the Sedona application as well as the graphics from the SD card.
- **Networks**  
Configure network communications, like Modbus, BACnet and P2P. Connecting FG+ to FG+ over BACnet and P2P, connecting also FG+ to FC20.

### Registration & training dates

If you want to know when and where our CPT Tools & F-series trainings take place, or if you want to register for a training, please get in contact with us via [training@easyio.eu](mailto:training@easyio.eu) or check out the training section on our website [www.easyio.eu](http://www.easyio.eu).



## EasyStack training

Although EasyStack is, like its name already says, very easy, training is recommended. Why? Because with training you learn how to get the best out of EasyStack. That's why we always encourage it.

The EasyStack training consist of:

- **Introduction**  
You cannot take advantage of big data if you don't know what it is. This introduction explains that to you and gives you answers on questions like: why is it so important tag the data nowadays, what is HayStack and how did we make Haystack easy?
- **EasyStack Overview**  
This topic shows you that EasyStack is mobile first (it grows as your screen grows) and the user interface is contact sensitive, so you easily change from one app to another and see what is related to the location you are at. All this is done automatically, based on tags.
- **Flexible Architectures**  
EasyStack can be installed in the cloud, a (local) server, a global controller and even in an edge device. Everything can easily exchange data using the Haystack protocol that takes full advantage of the tagging modelling.
- **Graphics**  
The graphics in EasyStack are built based on tags. That's why one graphic can be used repeatedly everywhere in your project. The graphics are built using the browser and HTML5 / JavaScript technologies.
- **Historian**  
Learn how to create and share your favourite charts, for your personal or customer use. Do it once and use it repeatedly.
- **Alarms/FDD**  
Alarm programs give you a message when something is wrong. They work in the same way as graphics. Create one alarm program and it can be used for all devices of the same type.

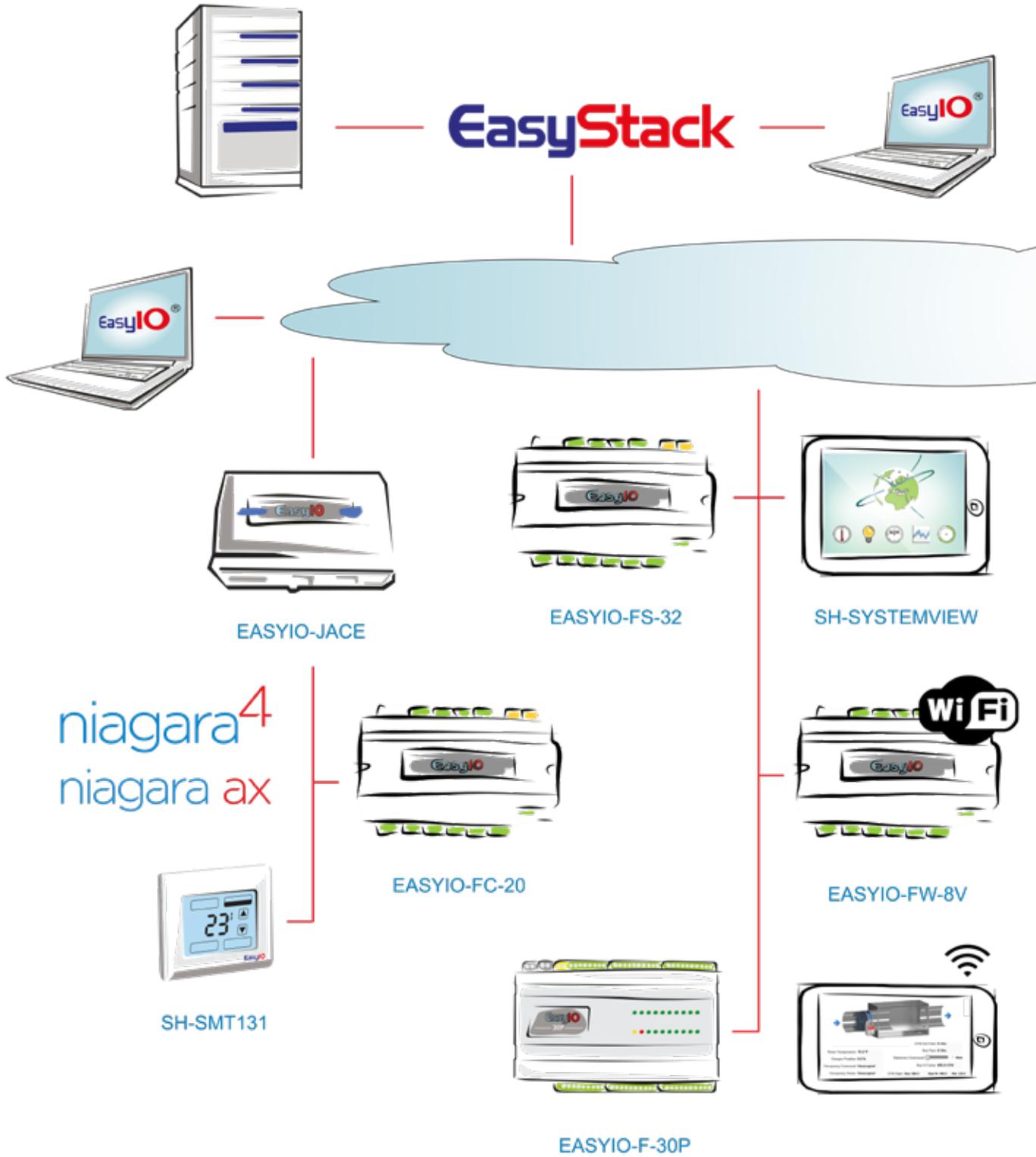
- **Schedules**  
Learn how to configure, clone and relate the schedulable points with your schedules.
- **Notes**  
Learn how to manage efficiently and improve the communication with your customer by using notes in EasyStack. Keep track of that communication using the power of the folio database.
- **Logic Builder**  
Build one program that can control several equipments, change it once and change them all using block programming within the browser.
- **Folio**  
This app shows you how easy the database structure is. If you understand how a filter works on an excel sheet, then you understand how to use the stack database. Filter, query, change and delete records in here or use advanced tools to do more and save time. Learn how to take full backups and restore by using snapshots.
- **DB Builder**  
The DB builder is the place where all the magic happens. Bring your points in, using our set of 'connectors'. Organise them in the way you want, and not the way your tools demand you to. Tag them and see how easy your job gets done, by creating the real relations that exist between them. Define what points collect historical data and define the ones that can be controlled from a schedule, so your end user can define how may schedules he wants and who knows even create them himself.

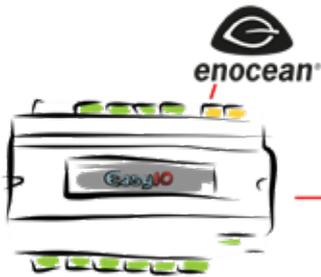
### Registration & training dates

If you want to know when and where our EasyStack trainings take place, or if you want to register for a training, please get in contact with us via [training@easyio.eu](mailto:training@easyio.eu) or check out the training section on our website [www.easyio.eu](http://www.easyio.eu).

# EasyStack

## Topology





EASYIO-FG-32+/20+



EASYIO-FW-14/8



EASystack-ML100



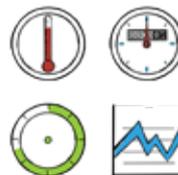
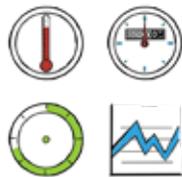
EASYIO-FG-32+/20+



EASYIO-FC-20



EASYIO-FG-LCD



EASYIO-FW-14/8



## The F-series: BEMS in a box

As a building owner or facility manager you need a reliable building energy management system and you want to keep the costs of the building as low as possible. There are many different users in a building, all with different requirements and all want to work and live in a healthy and comfortable environment. As a system integrator you need a flexible system, easy to install, manage and maintain.

EasyIO makes it possible to fulfil these requirements with an open and fresh approach for building automation and energy platforms: the F-series. These controllers are boosted with the latest technology on board, like HTML5, PHP, SQL, embedded gateways and protocols. And, there is no additional license fee. But they have more:

### Bring Your Own Device

The F-series have a built-in HTML5 web server hosting your graphics. You can build your graphic the way you want to. They are also tablet and mobile phone friendly.

### Metering

Connect energy-meters by using the built-in technologies. All the universal inputs can read pulses. Electricity, water and gas meters are easy to connect.

### Data

Let the content find you. Our controllers can push your data, email and can handle HTTP requests. Where is the limit? They have a built-in SQLite database and a management tool. The SD-card (max. 16Gb) gives you the ability to store 80 Million history records on-board!

### Built-in technologies

Open up your building now and in the future, using Bacnet IP, Bacnet MSTP, Modbus TCP/IP, Modbus RTU and build your own drivers for free, using our API object.

### HVAC Controls

Our programmable controller is ready to handle every kind of HVAC. The huge HVAC library opens

up every project. Optimizers will make sure your system will start and stop at the right moment using no more energy than needed. They got schedulers on board with a holiday calendar, accessible through HTML5 web pages.

### Free dashboard

The F-series have a built-in dashboard by Freeboard, an open source dashboard engine. This enables you to create a custom dashboard, using data from multiple controllers.

### Wireless: WiFi and EnOcean

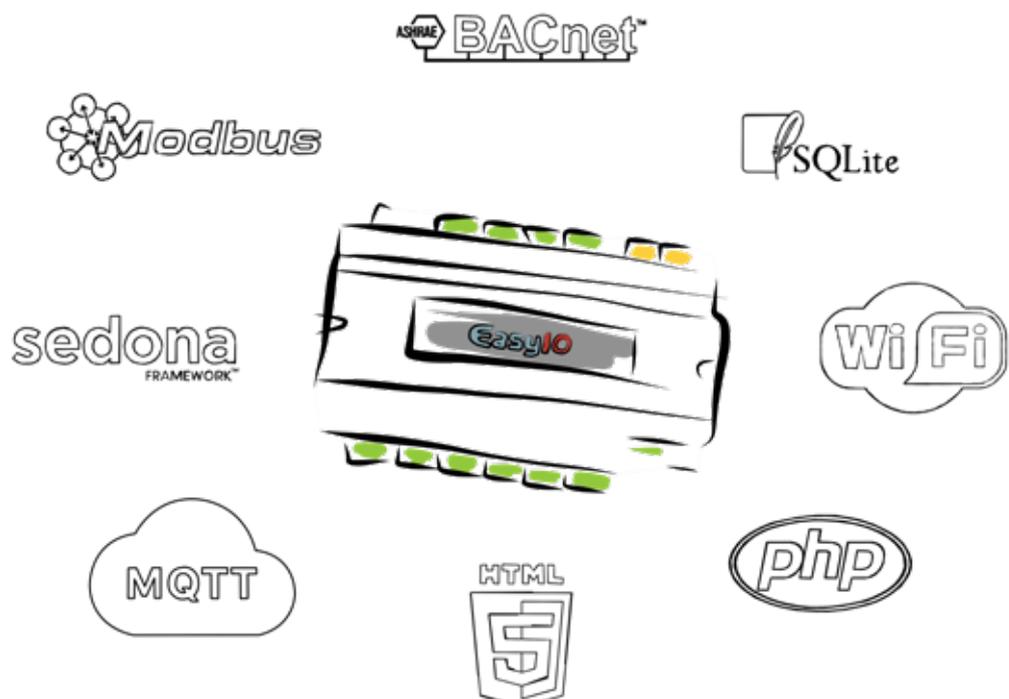
Through WiFi and our optional EnOcean gateway, we enable you to go wireless and save on wiring and mounting. This also means no downtime by installing your complete application wireless.

### iFrame technology

The F-series support iFrame technology. Add ip-cameras (door/corridor) or any other web service such as a weather forecast to your HTML5 web pages, using our open source iFrame widgets.

### Adapter widgets

Unleash your creativity by creating your own widgets for CPT graphics. This technology enables you to easily adopt third party JavaScript libraries like D3js, C3js, etc.



## CPT Tools

CPT Tools is an open source software programming tool that provides third party configuration and management tools for products that run in a Sedona environment, such as the FG series, the FC series, the FW series and the 30P. Our EasyIO FG Series are boosted with the latest technologies on board, like HTML5, PHP, SQL, embedded gateways and protocols. CPT Tools has the ability to configure and manage the web server on the EasyIO FG Series.

### Workspace

The Workspace is the location for developing application programs. There is a view finder in the top right corner of the Workspace sheet. The view finder enables simple object location and worksheet navigation within the Workspace. Objects can be added to the Workspace in different ways.

### Kit Management

Kit Management in CPT Tools is used to manage the Sedona kits in a Sedona controller. The Kit Manager will display all the kits that are installed in the CPT Tools Sedona folder or in the Sedona folder selected.

### Graphics for web browser

CPT Tools comes with a built-in feature for creating graphical pages that can be viewed in a web browser. Specific to the EasyIO FG Series, is the possibility to build graphics in the controller itself (on the SD card).

### History Chart with SQL database

The EasyIO FG Series has a SQL Lite program in its VM. The SQL Lite is capable of storing history into tables and columns. SQL Lite table data can be displayed in CPT web graphics. This feature is only available with CPT graphics.

### Adapter Widget

CPT Tools already provides many widgets for a user to choose from when building CPT graphics. But since it is hard to meet all user's diverse requirements, we brought the Adapter Widget

in. The Adapter Widget already handles the logics of data communication, applies basic widget properties and loads JavaScript/CSS files, so the developer of Adapter Widget can just focus on the specific logic of his own widget.

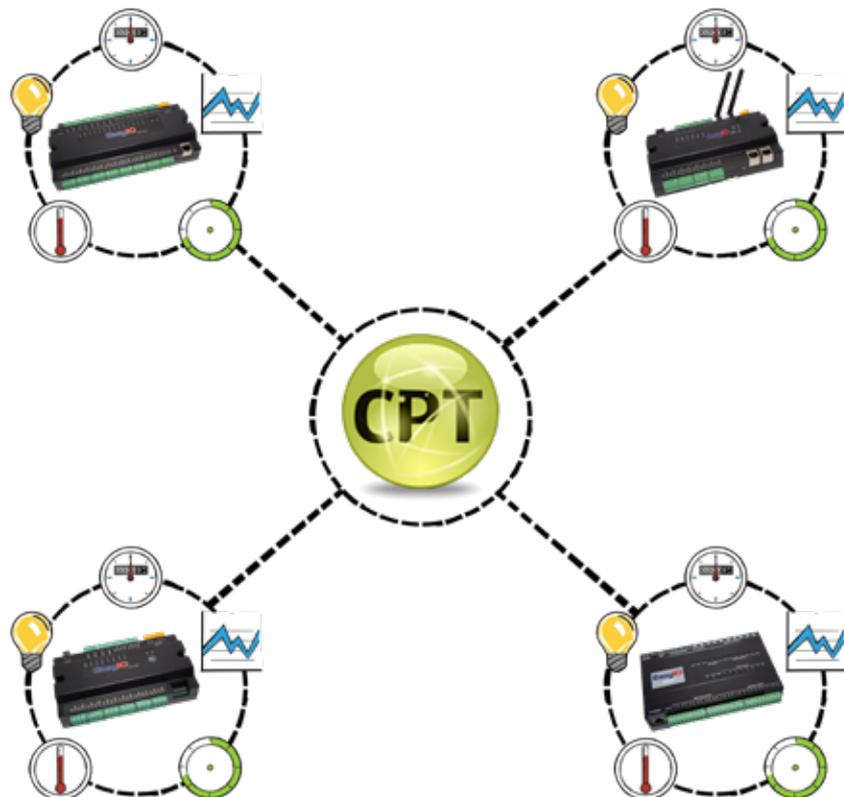
### Backup and restore via web browser

The CPT Tools web server has an option for backups and restores of the Sedona application. This option backups the Sedona application as well as the graphics from the SD card.

### Dashboard

The EasyIO FG+ series dashboard (Freeboard) is a built-in feature that enables users to present important data in dashboard form. It is a very handy tool and feature for small scale implementation. And most important: it is free. Presenting data to end users is simple and fast.

In the CPT Tools section on our website [www.easyio.eu](http://www.easyio.eu), you can see some screenshots of CPT Tools.



## Product matrix

Model	FG32+	FG20+	FS32	FW-14	FW-8	FW-8V	FR-02	FC-20	30P
Haystack ready	✓	✓	✓	✓	✓	✓			✓
Live programming	✓	✓	✓	✓	✓	✓			✓
Web server	✓	✓	✓	✓	✓	✓			✓
Web server with full graphics	✓	✓	✓						
User custom web page	✓	✓	✓						
Dashboard	✓	✓	✓	✓	✓	✓			
SD card support	✓	✓	✓						
SD card built-in	✓ 8GB	✓ 8GB							
UI	16	12	16	8	4	4	1 (AI)	12	8
UO (voltage, current, OC)	8	6	8						
AO (voltage, current)				4 (voltage)	4 (voltage)	4 (voltage)		4	4
DO (voltage-free relay)	8	2	8	2			2	4	8
RS485	2	2	2	1	1	1		2	1
Ethernet	1	1	1	2	2	2			1
USB	1	1	1						
WiFi				b/g/n	b/g/n	b/g/n			
BACnet MSTP client	20 devices	20 devices	31 devices	4 devices	4 devices	4 devices			
BACnet MSTP server	✓	✓	✓					✓	✓
BACnetIP client	✓	✓	✓						
BACnetIP server	✓	✓	✓	✓	✓	✓			✓
ModbusRTU slave	✓	✓	✓						✓
ModbusRTU master	✓	✓	✓					1 device	8 devices
ModbusTCP slave	✓	✓	✓						✓
ModbusTCP master	✓	✓	✓						
SQL server	✓	✓	✓						
VPN client/server built-in			✓						



## EasyIO FG controller 32 I/O's

EASYIO-FG-32+



## EasyIO FG controller 20 I/O's

EASYIO-FG-20+

The EasyIO FG+ series Sedona controllers are freely programmable, internet ready field controllers. They support multi concurrent protocols and services such as BACnet, Modbus, TCOM, web services and both server and client services. The range complies with the 'Internet of Things' by interfacing directly to cloud services, without an additional gateway or server. To power the application, the FG+ has a dual ARM processor engine, and also a built-in web server (HTML5, PHP, SQL).

### EASYIO-FG32+

- Live programmable via free CPT Tools
- 8G SD card built-in for Histories and Graphics
- 1 x 10/100 Ethernet Port
- 2 x RS485
- 16 x Universal Inputs
- 8 x Digital Relay Outputs with LED for Status
- 8 x Universal Outputs (200mA sink for switching relays)
- BACnet, TCOM, Modbus & HTML5 web server

### EASYIO-FG20+

- Live programmable via free CPT Tools
- 8G SD card built-in for Histories and Graphics
- 1 x 10/100 Ethernet Port
- 2 x RS485
- 12 x Universal Inputs
- 2 x Digital Relay Outputs with LED for Status
- 6 x Universal Outputs (200mA sink for switching relays)
- BACnet, TCOM, Modbus & HTML5 web server



## EasyIO FC controller 20 I/O's

EASYIO-FC-20

The EASYIO-FC-20 is the first product in the FC range, designed to complement the 30P and FG+ series. All of the FC series products are equipped with two RS485 ports, are BACnet and Modbus selectable and can be programmed with CPT Tools.

- Live programmable via free CPT Tools
- 2 x RS485
- BACnet MS/TP server support
- Modbus RTU slave support
- 12 x Universal Inputs
- 4 x Digital 24VAC relay Outputs
- 4 x Analogue Outputs
- DIP selectable communication mode



## EasyIO FS controller 32 I/O's

EASYIO-FS-32

The EasyIO-FS-32 is a high performance server class controller with a quad core processor and 8GB flash. Its software capabilities are very powerful with HTML5 graphics and multifunctional adapter widgets. The built-in VPN client/server makes your connectivity safe and unique for BMS controllers.

- 1 x 10/100 Ethernet Port
- 2 x RS485
- 16 x Universal Inputs
- 8 x Digital Relay Outputs with LED for Status
- 8 x Universal Outputs (200mA sink for switching relays)
- BACnet, TCOM, Modbus & HTML5 web server
- Quad core processor 1.2Ghz, 512MB RAM, 8GB flash memory, SD holder
- Built-in VPN client/server



## EasyIO FW controller 14 I/O's

EASYIO-FW-14

The EasyIO FW-series are new breed, high performance, freely programmable, wireless Wi-Fi Sedona controllers for both stand-alone and as part of a BMS. You now have Wi-Fi mesh above the ceiling, you will save on labor and wiring. The Wi-Fi is client and access point, each controller extends the range. The FW controllers are a perfect fit for any kind of application, with built-in HTML5 dashboard for easy wireless monitoring, controlling and commissioning. They're ideal for all kind of applications such as Fan Coils, VAV's, AHU's, room and stand-alone applications, featuring SOX, TCOM, FGP2P and BACnet IP and MSTP.

### EASYIO-FW-14

- Live programmable via free CPT Tools
- 2 x 10/100 Ethernet ports
- 1 x RS485
- BACnet MSTP client (4 devices) & BACnet IP server
- Wi-Fi network
- 8x Universal Inputs (voltage & resistance)
- 2x Digital Relay Outputs
- 4x Analogue Outputs (voltage)
- Dashboard



## EasyIO FW controller 8 I/O's

EASYIO-FW-8

### EASYIO-FW-8

- Live programmable via free CPT Tools
- 2x 10/100 Ethernet ports
- 1x RS485
- BACnet MSTP client (4 devices) & BACnet IP server
- Wi-Fi network
- 4x Universal Inputs
- 4x Analogue Outputs (voltage)
- Dashboard



## EasyIO FW VAV controller 8 I/O's

EASYIO-FW-8V

The EasyIO-FW-8V is a new breed, high performance, freely programmable, wireless Wi-Fi Sedona controller that includes a built-in pressure pick-up sensor for air flow measurement used in VAV applications. We can offer a special bundle: the EasyIO-FW-8V plus an EasyIO Belimo VAV 5Nm 0-10V DC Actuator. Ask your representative for details.

- 1x air flow sensors
- Live programmable via free CPT Tools
- 2x 10/100 Ethernet ports
- 1x RS485
- BACnet MSTP client (4 devices) & BACnet IP server
- Wi-Fi network
- 4x Universal Inputs
- 4x Analogue Outputs (voltage)
- Dashboard



## EasyIO FR relay module

EASYIO-FR-02

The FR-02 is a relay module which can be mounted on din-rail. It allows 1 x AO coming from a controller to provide floating control via two built-in relays. The modes 1 or 2 are selected by a jumper on the FR-02. Relays rated for 5 million cycles.

- 1x Analogue Input
- 2x Digital Output



## EasyIO controller 30 I/O's

EASYIO-30P

The EASYIO-30P controller is a rugged, network centric, high performance multi-protocols Input / Output controller to accommodate general and specific applications, featuring Bacnet MSTP / IP, Modbus RTU / TCP protocols and a built-in web server for commissioning.

- Fixed / service web page
- 1 x 10/100 Ethernet port
- 1 x RS485
- 8 x Universal Inputs
- 8 x Digital Inputs
- 8 x Digital Outputs
- 2 x Transistor Outputs
- 4 x Analogue Outputs



## Single and dual duct VAV controllers

EASYIO-VAV-BAC-series

The EASYIO-VAV-BAC-series of controllers are an easy and unique approach to operating a wide variety of VAV terminal units. The integrated actuators, internal airflow sensors, and wide variety of application programs make these BACnet application specific controllers ideal for either new or retrofit installations.

- Easy to install
- Simple menu driven setup
- New or retrofit applications
- Native BACnet
- Easy system integration



## Room temperature sensors

STE-6000 Series

These compact room temperature sensors are designed to use with EASYIO-VAV-BAC-series controllers. They install easily without programming or configuration.

- The durable, low-profile, thermostat-style cover is visually appealing.
- Easy connections with standard Ethernet patch cable.
- Surface mounts on a hollow wall or on a standard electrical box with the appropriate backplate.

The following different models are available:

- STE-6010W43 A room temperature sensor only.
- STE-6014W43 A room temperature sensor with rotary set point dial.
- STE-6017W43 A room temperature sensor with rotary set point dial and override button.



## Digital temperature sensors

STE-8000 Series

These digital sensors are wall-mounted, temperature sensors to use with EASYIO-VAV-BAC-series controllers.

- Integrated operator interface that is ready to use with EASYIO-VAV-BAC-series controllers
- Large LCD display
- Simple three-button interface
- Continuously displays temperature and time
- Use as a service tool to set up EASYIO-VAV-BAC-series controllers
- Optional motion sensor to detect space occupancy and control temperature setback

The following different models are available:

- STE-8001W43 A digital temperature sensor only.
- STE-8201W43 A digital temperature and motion sensor.



## EasyIO touch screen 3.5" display

EASYIO-FG-LCD

The EASYIO-FG-LCD is a smart and cost effective touch screen interface to display real time status information and modify points values on a BMS. It works in the Sedona Framework and interfaces seamless with all Sedona based devices. It also makes information accessible from all systems connected to these devices. The FG-LCD can interface with up to 18 devices at any point in time.

- Sedona Framework support
- Supports multiple data types
- Ethernet based
- Access to up to 18 controllers
- Access to up to 600 points per controller
- Simple configuration and setup



## EasyIO universal power supply

EASYIO-FG-PWR72

A high quality din rail mounted, isolated, 3 x 24VDC, 1 amp each, BMS power supply. The first output can also provide 15V DC using a jumper setting. It's ideal to power EasyIO controllers and also powering the area controller, where applicable.

- 3x dedicated 24V DC regulated 1A Power Supplier
- 72W power, supports universal AC mains power 110/120V and 220/240V AC, 50/60Hz.
- High efficiency and high reliability, and it also has the protection function such as short-circuit protection, over current protection
- First output can be set to 15V/24V DC by changing the internal jumper under the cover
- Compact size



## Room temperature controller

SH-SMT131

The SH-SMT-131 offers a bright display that provides feedback of the air conditioning status. A user can easily turn the air conditioning on and off and adjust temperature/fan control. If the optional occupancy module is fitted, the SMT-131 will automatically change to a low energy consumption mode when the room is vacant.

- Bright back-light touch screen
- Relay & 0-10V equipment control outputs
- Single or three fan speed control
- Heat pump or heat cool control logic
- 0-10V DC fan control
- Extensive installer options menu
- PIR, window & door status inputs
- Integrated Modbus RTU communications
- Optional remote sensor(s) available



## Multifunctional room display

SH-FX-RP-A

This multifunctional room display is a full colour, freely programmable, modbus device. It fits perfectly with the FC and FG series. You can create your own graphics with the graphics editor, to measure, control or simply consult virtually any application or system you connect the display to.

- Free programmable
- Modbus RTU communication
- 250 I/O points
- Wall mounted or hand-held
- µSD card for complex graphics
- Integrated temperature sensor
- 5 built-in time schedules
- Selectable master or slave mode



**SystemView 7" tablet**

SH-Systemview7



**SystemView 9" tablet**

SH-Systemview9



**SystemView 10" tablet**

SH-Systemview10

The SystemViews have a slim and sleek profile for easy mounting. The devices are equipped with an advanced processor for smooth and high-speed performance. These android tablets feature a large capacitive touch screen for easy viewing. The tablets come with a special kiosk application designed for our industry and only available through EasyIO which makes them your perfect solution. The Systemviews are available with a 7, 9 and 10 inch screen.

**SH-Systemview7**

- 7 inch IPS display
- Resolution: 1024 x 600
- Android 4.4.2
- WiFi & Ethernet
- In-wall mounting bracket

**SH-Systemview9**

- 9 inch capacitive screen
- Resolution: 800 x 480
- Android 4.2.2
- WiFi & Ethernet

**SH-Systemview10**

- 10 inch IPS display
- Resolution: 1280 x 800
- Android 4.2.2
- WiFi & Ethernet
- On-wall mounting bracket

## EasyStack

EasyStack is a software technology that combines the core functionality of a Building Automation System (BAS) for connecting and controlling devices, with the added benefits of a Building Operating System (BOS) to manage and leverage data. The technology uses Haystack tagging and data modeling to provide unprecedented capabilities and functionalities.

EasyStack includes an entirely new application server and a graphic builder tool based on HTML5. The interface is completely designed for mobile devices, but also runs on desktops. With EasyStack you can build your entire customer's solution using just a browser. It is optimised for an efficient work flow and can run anywhere on any device. EasyStack makes you do your job faster, easier and better than ever before.

The technology leverages powerful tagging and data modeling which means you can use queries to access data and eliminate time consuming linking. EasyStack is designed to encourage community collaboration and seamlessly supports add-on applications such as automated analytics. EasyStack is contact sensitive so it already knows what you are about to do, when you're ready to do it, and it brings up the right wizards to help you.

### Graphics

Imagine graphics that are automatically generated: navigation, point summaries and links to histories that simply work

on a phone, tablet or desktop, without any laborious setup. All can be combined with custom graphics that can be created super fast. You are free to make any graphic you want with your data, by using JavaScript.

Dynamic 'related bubbles' make sure you have your hyper links to related apps like schedules, histories and notes always present. And guess what? They are all done automatically, based on tags.

### Historian

Point histories are always there, because of the related bubbles. In the Historian app you can compare your data very fast. You can customise your favourite charts by using JavaScript and save them for yourself or others.

### Alarms / FFD

In EasyStack the approach to alarming is radically changed and creating and managing alarms is much easier. You can now create alarms and FFD sequences once and reuse them everywhere.

### Schedules

A brand new approach to scheduling: we have eliminated the difficulty of linking schedules to equipment and the labour-intensive aspects of schedule management. As the interface is contact sensitive and based on tags, you always



know which schedule you should look at. When a schedule is changed or a new one is added, all related 'links' will automatically be updated for you. End users can create and assign new schedules themselves, there is no need to call the system integrator to do it.

**Notes**

The notes app is built-in to EasyStack enabling you and your customers to add messages related to any equipment in the database. Notes can be sorted, assigned to users, and even have an open/closed status. Your communication stays where it belongs: on the database of your BAS.

**Logic Builder**

Making your logical programs has never been so easy. You write a program that can run on every device of the same type, without copying or linking. One change, changes them all. Now imagine that you can do that with a browser and using blocks.

**Folio**

Folio is the tag database used by Easystack to store and organise your data. The tagging model allows you to easily design free-form, dynamic models of your data. With the Folio app you can query and batch edit your tags, complete with built-in functionality for viewing histories.

**DB Builder**

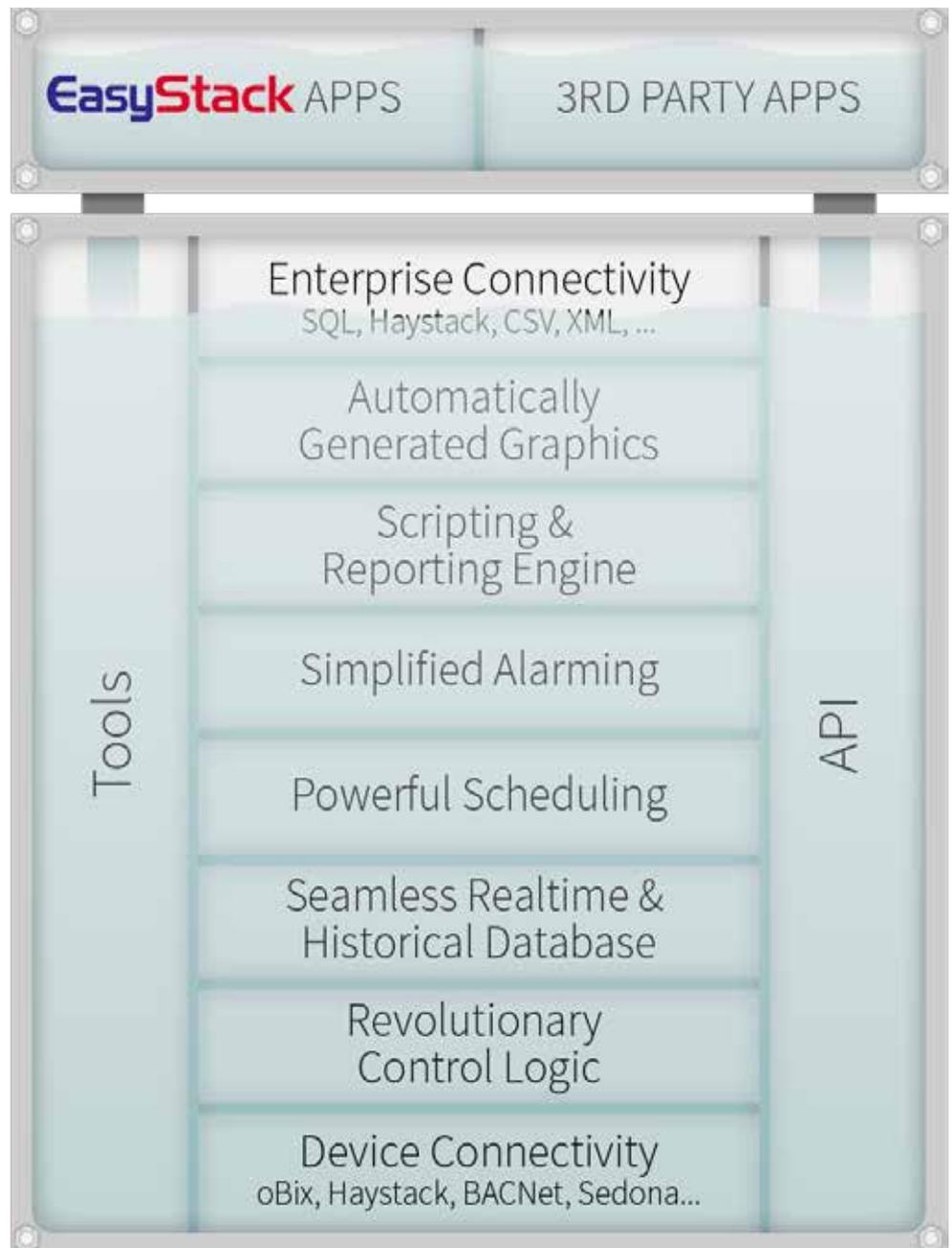
The DB Builder is the place where all the magic happens. Bring your points in, using our set of 'connectors'. Organise them in the way you want, and not the way your tools demand you. Tag them and see how easy your job gets done, by creating the real relations that exist between them. Define what points collect historical data and define the ones that can be controlled from a schedule, so your end user can define how may schedules he wants and can even create them himself.

**O&M Manuals**

Imagine how easy it is for maintenance teams to have all the manuals, drawings and specifications of the equipment at one click from the graphic page of the equipment. With EasyStack you can do that. It's even possible to add a manual and make it automatically show up with all your equipments of the same type.

**Haystack**

EasyStack uses the Haystack open standard, an open source initiative to streamline working with data from the Internet of Things. The main goal of the project is to standardize data, so analysing gets easier and cheaper, and in the end the data gives more value.



# EasyStack

## EasyStack

EASYIO-XXXX

EasyStack is a next generation software suite including an entirely new application server, combined with the custom graphic tool EasyStack Builder, and the EasyStack Mobile app. You can now build your entire customer's solution using a unified tool set optimized for efficient work flow.

- Next generation building automation framework.
- Featuring an entirely new application server.
- A unified applications suite optimized for efficient work flow.
- Leverages powerful tagging and data modelling.
- Uses queries to access data and eliminate time consuming linking.
- Designed to be open and to encourage com.
- Comes with Bacnet, Modbus and Haystack for free.

## EasyStack caps

EIO-CAPS-XXXXX

A **site** is a building or an entity that has an address which will be used for navigation and organisation of data. A **point** represents hardware inputs, outputs and software points that are continuously subscribed (used for collecting history, or used in control, or for alarming). A **cap** is a way to give value to each of the metrics - 1 site = 20 caps, 1 point = 1 cap, 1 equip = 1 cap. The price per cap gets lower, the bigger the bundle size. Software upgrades are free for the first year.

Any combination of caps is possible. Caps are available in bundles of 100 caps (EIO-CAPS-100) to 100K caps (EIO-CAPS-0100K).

Grow caps as your project(s) grow, feel free by its flexibility.



## EasyStack ML100G-10 IoT-server

EIO-EASYSTACK-ML100G-10-WIN-IoT

The ML100 server represents the next generation of small form factor industrial computing, packing Intel Broadwell processing into our toughest ever NUC enclosure. It can be used to install our unique EasyStack enterprise software and can manage one or multiple buildings.

- Windows 10 IoT / 64bit
- DDR3L 1600 SO-DIMM memory 4GB
- Transcend 370m SATA SSD 64GB
- Intel Bay trail processor



## EasyStack ML210G-50 IoT-server

EIO-EASYSTACK-ML210G-50-WIN-IoT

The ML200 server represents the next generation of small form factor industrial computing, packing Intel Broadwell processing into our toughest ever NUC enclosure. It can be used to install our unique EasyStack enterprise software and can manage one or multiple buildings.

- Windows 10 IoT / 64bit
- DDR3L 1600 SO-DIMM memory 4GB
- Transcend 370m SATA SSD 64GB
- Intel Haswell i5 thin mini-ITX processor

## Niagara AX

Integrating geographically dispersed, multi-vendor devices into a common environment used to be time-consuming and expensive. Niagara AX changed all that—making it easier to connect and control. Whether you are an OEM looking to create new applications and Internet-enabled products, or a business seeking to improve your performance, Niagara AX gets you there faster.

Tridium is committed to supporting the final long-term Niagara AX platform. It released Niagara AX version 3.8u1 with JACE® 8000 support, Java Web Start and other notable features. And, it released Niagara Enterprise Security version 2.3, built on this updated Niagara AX platform.

### Empowering users with practical tools

Niagara AX is an open, Java-based framework that can connect almost any embedded device or system—regardless of manufacturer or communication protocol. It includes a com-

prehensive graphical tool set that lets you build rich applications in a drag-and-drop environment and easily manage your assets using a standard web browser.

### A true foundation

The Niagara AX Framework is proven, adopted in multiple markets and industries, and deployed in more than 70 countries—and its many benefits are easy to see. Reduce project implementation requirements. Free up your organization from supporting high-cost, time-consuming development functions. Increase capacity for product innovation. Build products and applications with unparalleled reliability, security, operational integrity, flexibility and bottom-line value.

### Single tool

Everything you need to get started is at your fingertips with a single integrated tool set for rapid and easy implementation that reduces development time, allowing you to get to market faster.

niagara ax

## Niagara 4

Niagara 4 builds on the legacy of the Niagara Framework® in new and exciting ways. It's less reliant on browser plug-ins, faster and easier to use. A truly open framework, Niagara 4 delivers a variety of notable improvements to help businesses take full advantage of the Internet of Things, including advanced visualization and new search, security and navigation tools.

Niagara 4.2 is the most recent version of Tridium's flagship IoT software platform. Niagara 4.2 includes integration of Niagara Analytics 2.0, bringing the benefits and efficiencies of data-driven performance to users. Every Niagara 4 Supervisor and JACE® 8000 base license will have a base option of Niagara Analytics 2.0 with all features and functionality of the product, and 25 analytical points.

This integrated release allows for real-time business intelligence, enabling users to make smarter, swifter decisions leading to less waste and expense. Niagara 4.2 includes Linux support, a highly anticipated alarm portal and more robust Niagara 4 Supervisor data management. The new JACE 8000 legacy drivers are also now supported in this latest version.

Niagara 4 features a bold and intuitive new interface. Modern and easy to use, the platform utilizes HTML5 to provide an array of rich features. Our powerful new framework makes the user experience simpler and more robust, giving users maximum control of their data and decisions.

niagara 4

## niagara ax

### Niagara AX supervisor

EASYIO-S-AX

The EasyIO AX Supervisor is a flexible network server used in applications where multiple EasyIO JACE controllers will be networked together. The EasyIO AX Supervisor serves real time graphical information displays to standard web-browser clients and also provides server-level functions such as: centralized data logging, archiving, alarming, real time graphical displays, master scheduling, system-wide database management, and integration with enterprise software applications. In addition, the EasyIO AX Supervisor provides a comprehensive, graphical engineering tool set for application development.



### EasyIO JACE 300E

EASYIO-J-300E

The EASYIO-J-300E is a compact, embedded controller/server platform. It combines integrated control, supervision, data logging, alarming, scheduling and network management functions with internet connectivity and web serving capabilities in a small, compact platform. The EASYIO-J-300E makes it possible to control and manage external devices over the internet and present real time information to users in web-based graphical views.

- Embedded Power PC platform @ 400 MHz
- 256 MB SDRAM & 128 MB flash memory
- Supports open & legacy protocols
- Web user interface



### EasyIO JACE 600E

EASYIO-J-600E

The EASYIO-J-600E is a compact, embedded controller/server platform. It combines integrated control, supervision, data logging, alarming, scheduling and network management functions with internet connectivity and web serving capabilities in a small, compact platform. The EASYIO-J-600E makes it possible to control and manage external devices over the internet and present real time information to users in web-based graphical views.

- Embedded Power PC platform @ 524 MHz
- 128 MB SDRAM (256MB optional DDR RAM) & 128 MB flash memory
- Supports open & legacy protocols
- Web user interface



### EasyIO JACE 700

EASYIO-J-700

The EASYIO-J-700E is a compact, embedded controller/server platform. It combines integrated control, supervision, data logging, alarming, scheduling and network management functions with internet connectivity and web serving capabilities in a small, compact platform. The EASYIO-J-700E makes it possible to control and manage external devices over the internet and present real time information to users in web-based graphical views.

- Embedded Power PC platform @ 524 MHz
- 512 MB SDRAM (1 GB optional DDR RAM) & 1 GB flash memory
- Supports open & legacy protocols
- Web user interface



## EasyIO JACE equipment controller

EASYIO-JEC-334

A package with the EASYIO-J-300E and a 34 points I/O controller.

- Embedded Power PC platform @ 400 MHz
- 256 MB SDRAM & 128 MB flash memory
- Supports open & legacy protocols
- Web user interface
- 34 hardware control points (expandable)



## EasyIO RS 232 card

EASYIO-NPB-232

The RS-232 Option Card is a plug-in communications card for enabling communications to remotely control a device that uses RS-232 network communications at baud rates up to 115.2KBps. The connection is provided via a 9 pin D-style connector. This card provides one RS-232 port on a single plug-in card that occupies one option card slot in a JACE-2, JACE-3, JACE-6, JACE-7 or M2M JACE.

- Plugs into standard JACE2/3/6/7 or M2M JACE
- All necessary power is supplied by the JACE
- LEDs provide visual indication of operation
- Device integration follows the standard Niagara Driver Framework architecture



## EasyIO 2x RS 485 card

EASYIO-NPB-2X485

The RS-485 Option card is an optional plug-in communications card for enabling communications to remote control devices that use RS-485 network communications at baud rates up to 115.2KBps over a two-wire network. This card provides two electrically isolated RS-485 ports on a single plug-in card that occupies one option card slot in a JACE-2, JACE-3, JACE-6, JACE-7 or M2M JACE. The network termination is provided by Weidmuller style 3-terminal connectors.

- Plugs into standard JACE 2/3/6/7 or M2M JACE
- All necessary power is supplied by the JACE
- LEDs provide visual indication of operation
- Device integration follows the standard Niagara Driver Framework architecture



## EasyIO JACE battery

EASYIO-NPB-BATT

Custom 12V NiMH (Nickel Metal Hydride) battery pack assembly with two-wire cable and connector plug, pre-mounted on a metal "H-bracket" with four mounting holes.

- Plugs into standard JACE2/3/6/7
- On JACES 3E and 6E Provides up to 10 minutes of runtime during power outages and disturbances



## EasyIO LonWorks card

EASYIO-NPB-LON

The LON Option Card is an optional plug-in communications card for LonWorks™ based control devices and it is compatible with the JACE series products. It provides Lon FTT10A compatible communications with remote unitary, VAV, and other similar controllers. This card provides one Lon FTT10A port on a single plug-in card that occupies one option card slot in a JACE-2, JACE-3, JACE-6, JACE-7 or M2M JACE.

- Plugs into standard JACE2/3/6/7
- All necessary power is supplied by the JACE
- LEDs provide visual indication of operation
- Device integration follows the standard Niagara Driver Framework architecture



## JACE power supply

SH-MDR-20-15

Switching power supply, 20W, single output 15VDC. Plastic body and DIN rail support.

- Universal AC input/Full range
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- Can be installed on DIN rail TS-35/7.5 or 15
- NEC class 2 / LPS compliant
- Built in DC OK active signal
- LED indicator for power on
- No load power consumption < 0.75W
- 100% full load burn-in test



EASYIO-T-IO-16-485



EASYIO-T-IO-16



EASYIO-T-IO-34

## EasyIO optional I/O modules

The EASYIO-T-IO modules expand the JACE capability by providing inputs and outputs for monitoring and control functionality. In addition, the NiagaraAX Framework library of control function blocks can be utilized to build complex control algorithms in the JACE. There are three different types:

### EASYIO-T-IO-16-485

- Remote 16 point I/O module
- RS-485 bus connected to JACE600E
- Up to 16 units may be connected maximum

### EASYIO-T-IO-16

- 16 point I/O module
- Directly connects to JACE I/O connector

### EASYIO-T-IO-34

- 34 point I/O module
- Directly connects to JACE I/O connector

## niagara<sup>4</sup>

### Niagara 4 supervisor

EIO-S-N4

The EasyIO N4 Supervisor is an IoT (Internet of Things) software platform used in server-class applications. It makes managing all buildings at an enterprise level possible, giving facilities managers the ability to quickly respond to problems and insights to optimize their system. N4 allows multiple Niagara-based JACE® controllers, along with other IP-based controllers, to be networked together. It serves real-time graphical information to standard Web-browser clients and provides server-level functions. These functions include centralized data logging/ trending, archiving to external databases, alarming, dash boarding, system navigation, master scheduling, database management, and integration with other enterprise software applications through an XML interface. Also, it provides a comprehensive graphical engineering tool set for application development.

When connecting to JACEs that are running older versions of Niagara, these compatibility guidelines apply:

- Niagara AX: EasyIO N4 Supervisors can connect to JACEs running Niagara AX versions 3.6u4, 3.7u1, 3.8R and higher.
- R2: Niagara AX and EasyIO N4 Supervisors can connect to JACEs running R2 through the oBIX XML interface only.



### EasyIO JACE 8000

EASYIO-J-8000

The JACE 8000 is a compact, embedded Niagara Framework®-based controller and server platform for connecting multiple and diverse devices and sub-systems. It's designed as a Network Automation Controller optimized for BAS applications. With Internet connectivity and Web-serving capability, the JACE 8000 controller provides integrated control, supervision, data logging, alarming, scheduling and network management. It streams data and rich graphical displays to a standard Web browser via an Ethernet or wireless LAN, or remotely over the Internet.

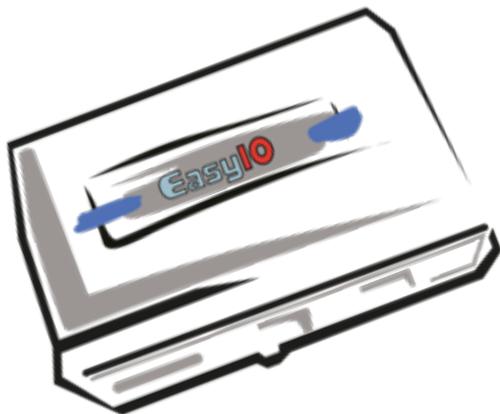
The licensing model for the JACE 8000 controller features standard drivers along with optional IO and field bus expansion modules for ultimate edibility and expandability. The JACE 8000 controller is optimized for Niagara 4, which takes a "defence-in-depth" approach to Internet of Things security and is secure by default. In larger facilities, multi-building applications and large-scale control system integrations, Niagara 4 Supervisors can be used with JACE 8000 controllers to aggregate information, including real-time data, history and alarms, to create a single, united application.

- 1000 MHz ARM Cortex-A8 with secure boot
- 1 GB DDR3 SDRAM
- Removable micro-SD card with 4 GB flash memory / 2 GB user storage
- Supports open & legacy protocols
- Web user interface

## EasyStack and Niagara Legacy drivers

All listed Legacy Drivers are available for EasyStack, Niagara AX Framework and Niagara N4 Framework. We can provide you with a demo licence for testing purposes.

- Satchwell Micronet Driver
- Sauter novaNet Driver
- Siemens Desigo Driver
- TAC Driver
- Allen Bradley CIP Driver
- Allen Bradley CSPV4 Driver
- ASI Driver
- Barber Colman ASD Driver
- Barber Colman GCM Driver
- Clipsal Cbus Driver
- CSI Inet Driver
- Honeywell Cbus TCP Driver
- Johnson N2 Open Driver
- Johnson N2 Slave TCP Driver incl. TCP gateway
- OPC Server Driver
- Robertshaw Microsmart Driver
- Robertshaw DMS Driver
- Siemens Apogee 600 TEC UC Driver
- SMS Driver
- TCom Driver
- Trane Comm3 Non Isolated Driver
- Trane Comm4 Driver
- Trend IQ3 TCP Driver
- KNX IP Driver



*integrate every device and every building*



## EnOcean Peripherals

EnOcean provides reliable and self-powered wireless switches, sensors and controls with EnOcean technology for energy-efficient, comfortable and secure buildings. EnOcean based devices can flexibly be placed wherever they deliver most accurate data. This results in significant energy savings at low installation cost – up to 40 percent.

Energy harvesting wireless sensor networks from EnOcean are the key to 'intelligent green buildings':

- Building automation reduces energy consumption and operating costs. Furthermore, it increases security and comfort.
- Wireless technology is essential to a flexible, efficient building automation at minimized installation time and system cost.
- Battery-less devices eliminate the need to monitor, replace and dispose of batteries. This saves maintenance cost and resources, particularly in large systems.

Benefits at a glance:

- Energy savings
- Flexible applications
- Time-savings
- Maintenance-free
- Eco-friendly
- Cost savings

Products 'enabled by EnOcean':

- Self-powered Wireless Switches
- Self-powered Wireless Sensors
- Actuators & Controllers
- Gateway & Building Management Systems
- Accessories





### EnOcean to RS485 Gateway

SH-ENO-RS485-6011000

The SH-ENO-RS485-6011000 is a device for surface mounting. It serves as bidirectional gateway between the EnOcean devices and EasyIO-FG controllers. The gateway receives telegrams from all EnOcean devices and puts them on the RS485-Bus or enables the RS485-System to transmit RF-telegramms to EnOcean devices. There is no special additional software needed. The gateway comes with the EasyIO-FG-EnOcean driver.

- Bidirectional gateway for EnOcean based sensors and actuators.
- The STC65RS485 enables the receipt and transmission of radio telegrams corresponding to the EnOcean communication protocol.



### EnOcean room temp. & hum. sensor

SH-RTF-16X

The SH-RTF-16X room temperature sensor is a wireless sensor based on EnOcean Dolphin technology with bidirectional communication. It is used to measure the room temperature, the ambient humidity and the supply voltage of the sensor, and their transmission. The sensor is energy self-sufficient thanks to a built-in solar cell. There are two types available:

- SH-RTF-160; measures temperature (0-40 °C) & humidity every 100 sec., EEP A5-10-10
- SH-RTF-161; measures temperature (0-40 °C) & humidity between 2-1000 sec., power supply display, control buttons, EEP A5-10-03 & A5-10-10



### EnOcean indoor temperature sensor

SH-NO-STP-2-1-05

The SH-NO-STP-2-1-05 indoor temperature sensor is a wireless and battery-less sensor, EnOcean compliant. Combined with our gateway, the sensor sends the temperature of a room with a precision below 0.2°C, and a measure range from 0°C to 40°C. The sensor checks the temperature every 100 sec. If the temperature changed for more than 0.5°C compare to previous value, the new temperature is sent to the gateway. Without any variation, the temperature is sent every 15 minutes.

- EEP A5-02-05
- Measure range from 0°C to 40°C



### EnOcean outside temperature sensor

SH-SR65

This sensor is used for temperature detection in outdoor areas, cold stores, greenhouses, production plants and warehouses. With integrated temperature sensor and solar energy storage for maintenance-free operation. Self-powered EnOcean wireless technology. Transmission to receiver by means of radio telegrams according to EnOcean standard.

- Measure range from -20°C to 60°C
- Outdoor usage
- EEP A5-02-14
- Checks the temperature every 100 sec.



## EnOcean clamp-on temperature sensor

SH-SR65-VFG

Self-powered wireless EnOcean clamp on pipe temperature sensor. With integrated temperature sensor and solar energy storage for maintenance-free operation. Self-powered EnOcean wireless technology. Transmission to receiver by means of radio telegrams according to EnOcean standard.

- Measure range from 10°C to 90°C
- To clamp on pipe
- EEP A5-02-17
- Checks the temperature every 100 sec.



## EnOcean outdoor light sensor

SH-SRLi65

Wireless outdoor light sensor for blind systems. Can also be used to control light at sunset. With integrated light sensor and solar energy storage for maintenance-free operation. Self-powered EnOcean wireless technology. Transmission to receiver by means of radio telegrams according to EnOcean standard.

- 0..510 Lux, 0..1000 Lux (10 Bit), 0..1020 Lux, 300..30.000 Lux, 600..60.000 Lux, configured via airConfig
- Outdoor usage
- EEP A5-06-01
- Checks the light every 100 sec.



## EnOcean wall switch

SH-1251153-1000000

The SH-1251153-1000000 wall switch is a wireless and battery-free universal transmitter with one rocker centrally positioned, suitable for various switch programs of various leading manufacturers. The wall transmitter allows wireless and battery-free remote control of actuators for lights, valves, ventilation, etc. Only upon actuation of a rocker, a radio telegram is sent, which is received and evaluated by all actuators / receivers. When using corresponding bottom panels, the wall transmitter can be used in combination with conventional switches and sockets.

- EEP F6-02-01, F6-02-02, F6-02-03.
- Controls actuators for lights, valves, ventilation, etc



## EnOcean window/door contact

SH-2101153

The EnOcean window/door contact 1-channel is a battery- and maintenance-free radio sender that detects if a window or door is opened or closed. The power generation is effected by transformation of room light into electrical energy by a solar generator. It conduces to the equipment condition monitoring by means of a reed contact with magnet of windows and doors and the radio transmission to actors/receivers/gateways.

- EEP D5-00-01



## EnOcean 1 channel switch actuator

SH-3110000-UPS230/10

These switch actuators are devices designed for flush mounting. By means of radio transmitters or gateways or through conventional key switches or switches which are connected to the branch extension input, a series of electrical loads can be switched via its output.

- Can be programmed and deleted as well as individual functions can be assigned to each transmitter.
- Possible functions are delayed switch-on and switch-off times, one-key operation, switch follower, etc.
- Different parameters can be set such as the relay switch position after the line voltage has been restored, the hook-up of a repeater function, etc.

### SH-3110000-UPS230/10

- 1 channel switch actuator
- EEP D2-01-01
- Switch on/off (delays)
- One-key operation (toggle)
- Impulse



## EnOcean 2 channel switch actuator

SH-3112000-UPS230/12

These switch actuators are devices designed for flush mounting. By means of radio transmitters or gateways or through conventional key switches or switches which are connected to the branch extension input, a series of electrical loads can be switched via its output.

- Can be programmed and deleted as well as individual functions can be assigned to each transmitter.
- Possible functions are delayed switch-on and switch-off times, one-key operation, switch follower, etc.
- Different parameters can be set such as the relay switch position after the line voltage has been restored, the hook-up of a repeater function, etc.

### SH-3112000-UPS230/12

- 2 channel switch actuator
- EEP D2-01-11
- Switch on/off (delays)
- One-key operation (toggle)
- Impulse



## EnOcean sunblind switch actuator

SH-3312000-UPJ230/12

This multifunction sunblind actuator 1-channel is a device for driving 230VAC tubular motors in blinds, roller blinds, awnings, roller or garage doors. Two interlocked outputs for controlling a drive to up to 30 radio transmitters (wall and hand-held transmitter, motion sensor and outdoor light sensors). Thanks to two-way communication, a status report is sent periodically or when state change. According to parametrization, the outlet is assigned different functions such as e.g. key sequences or switch-off delays of 10 minutes, which means that the switch actuator consists of the device itself (hardware) and the application program (software).

- EEP D2-05-00
- Stairway light 0.5-20 mins.



## EnOcean valve actuator

SH-ME8380

This wireless control valve actuator is designed for 2 way communication with other devices based on the EnOcean protocol. This 2 way communication allows carrying extra information to a controller (feedback). Position feedback of the actuator confirms the functionality of the actuator, dual temperature feedback is also available. Temperature sensor can be used to monitor room or media temperature all in the same single actuator, without using an extra point on your controller. Being a modulating unit it can be precisely positioned to flow requirement.

- EEP (controller) A5-3F-7F
- EEP (sensors) A5-10-03, A5-10-04, A5-10-05, A5-10-06, A5-10-10, A5-10-11, A5-10-12



## EnOcean current transducer

SH-60.CT 63A 50.60HZ.868

This wireless current transducer is designed to measure and report the AC current flowing in a single conductor. Powered from the measured conductor itself, the measured current value is reported every 10 seconds (or every 30 seconds if the current is found to be below 3A) using the industry standard, wireless EnOcean protocol. Capable of measuring currents up to a maximum of 63A (50Hz or 60Hz), the wireless current transducer is easily installed with no disturbance to the measured conductor.

- EEP A5-12-01
- Current value reported every 10-30 sec.
- Measures currents up to 63A (50Hz or 60Hz)



## EnOcean smart plug

SH-NO-ASP-2-1-XX

This smart plug allows to control (turn on/off) an electrical appliance plugged on it. It detects power outage and sends an emergency notification. It can be controlled through our gateway or directly through others EnOcean controllers. The learning process between the plug and its controller takes only few seconds. A local button allows to switch the plug on or off locally. There are different types:

- The SH-NO-ASP-2-1-X0 smart plug detects power outage and sends an emergency notification.  
EEP D2-01-0A
- The SH-NO-ASP-2-1-X1 smart plug detects power outage and measures the energy consumption.  
EEP D2-01-0B



## EnOcean room temperature sensor

SH-SR04

The SH-SR04 room sensor is a wireless sensor based on EnOcean technology. It can be used to measure the room temperature. It has an optional set point and fan stage adjustment as well as manual over ride for room/space applications.

- EEP A5-09-04
- Measure temperature range from 0°C to 51°C
- Checks the temperature every 100 sec.



## EnOcean in-wall switch actuator

SH-NO-SIN-2-0-00

The SH-NO-SIN-2-2-00 in-wall switch actuator can be controlled through our gateway or directly through other EnOcean controllers. It's very compact and flexible, with remote management commands and some remote procedure calls (remote and direct learn, for instance), supports 30 different EEPs and can learn up to 24 devices. Mounted behind your existing wired wall switch or in the ceiling, the SH-NO-SIN-2-2-00 in-wall module allows to make your home smarter (lights, power plug, heaters, etc...) very simple.

- EEP D2-01-12
- Supports 30 different EEP's
- Can learn up to 24 devices



## Room temp./hum./CO2 sensors

SH-307-00X

These are room temperature, humidity and CO2 sensors, providing a wide range of advantages and functions for supplying excellent indoor environment comfort. The products have been designed for use in ordinary housings, holiday homes, offices, warehouses, schools, hospitals or other buildings and public areas. There are four different types available:

- SH-307-001: Temperature, Humidity and CO2
- SH-307-002: Temperature and CO2
- SH-307-003: Temperature and Humidity
- SH-307-004: Temperature

- Measure temperature range from 0°C to 50°C
- Measure CO2 range from 0 ppm to 2000 ppm



## Room temperature sensors

SH-TEHR-NTC10-X

This is a room temperature sensor. The sensor of the unit is connected to the sensor input of the controller and the set point is adjusted by the potentiometer for desired temperature. Temperature is detected by an NTC thermistor with a nominal resistance of 10 kΩ/25 °C. There are two different types available:

- SH-TEHR-NTC10 room temperature sensor
- SH-TEHR-NTC10-P room temperature sensor with potentiometer

- Measure temperature range from 0°C to 50°C



## Outside temperature sensor

SH-TEU-NTC10

This temperature sensor is designed for automatic HVAC systems to detect outside temperature. Temperature is detected by an NTC thermistor with a nominal resistance of 10 kΩ/25 °C.

- Measure temperature range from -50°C to 50°C



## Duct temperature sensor

SH-TEK-NTC10

This temperature sensor is designed for automatic ventilating systems to detect duct temperature. Installation depth can be adjusted between 100...220 mm.

- Measure temperature range from -50°C to 70°C



## Immersion temperature sensors

SH-TEAT-NTC10-XX

These temperature sensors is made for detecting the temperature of heating and cooling water. Available is also the ATH 300 pocket with 310 mm immersion length. There are 50, 100, 150, 200, 250, 300, 350 and 450 mm mounting depths also available.

SH-TEAT-NTC10 immersion sensor for 80 mm pocket  
 SH-TEAT-NTC10-AT80 Ø 8 x 80 mm stainless steel pocket  
 SH-TEAT-NTC10-ATM80 Ø 8 x 80 mm brass pocket  
 SH-TEAT-NTC10-ATH80 Ø 8 x 80 mm acid-proof steel pocket  
 SH-TEAT-NTC10-300 immersion sensor for 300 mm pocket  
 SH-TEAT-NTC10-ATH300 Ø 8 x 300 mm acid-proof steel pocket

- Measure temperature range from -50°C to 120°C



## Strap-on temperature sensor

SH-TEP-NTC10

This temperature sensor is designed for automatic HVAC systems to detect pipes temperatures. Temperature is detected by an NTC10 element with a nominal resistance of 10 kΩ/25 °C.

- Measure temperature range from -50°C to 120°C



## Thermal actuator

SH-A-4X405-X0N00-1S

These thermal actuators are designed for controlling control valves in HVAC automation systems. They can be controlled by 24 Vac on/off control signal or PWM signal. SH-A-40405-00N00-1S is normally closed and SH-A-41405-10N00-1S is normally open.

SH-A-40405-00N00-1S thermal actuator 24 V, NC, fixed cable (1 m)  
 SH-A-41405-10N00-1S thermal actuator 24 V, NO, fixed cable (1 m)

- Force 95-105 N
- Stroke 4 mm
- Mounting: valve adapter concept - to be ordered separately



## Thermal actuator

SH-APR-40405-01N00-0

These thermal actuators are designed for controlling control valves in HVAC automation systems. The thermal actuator is controlled by 0...10 Vdc control signal.

- Control range 2-10 V
- Force 95-105 N
- Stroke 3,5 mm
- Mounting: valve adapter concept - to be ordered separately

Cables for these actuators are sold separately:

BA-ALL.5.3.01 removable cable, 1 m  
 BA-ALL.5.3.02 removable cable, 2 m  
 BA-ALL.5.3.03 removable cable, 3 m  
 BA-ALL.5.3.05 removable cable, 5 m  
 BA-ALL.5.3.10 removable cable, 10 m  
 BA-ALL.5.3.15 removable cable, 15 m  
 BA-ALL.5.3.20 removable cable, 20 m



## Maxline interface gateway

EasyIO MIG-112

The MIG-112 gateway comprises a simple yet powerful user friendly browser setup interface with no additional setup tools. It provides you with a very cost effective ways of integrating your legacy systems to Niagara AX and the all new Niagara 4. Only one IP interface to Niagara is required, as the serial communication ports, RS485 and RS232, are built into the MIG.

- ARM 9 S3C2416 400MHz Main Processor
- 64Mbyte RAM
- 128Mbyte NAND Flash
- SD Card Reader
- 1 × 10/100 Ethernet port
- 1 × RS232
- 2 × RS485



## TCP-GSM modem

EasyIO-A-TCP-GSM

This is a GSM modem that can also be used for SMS service. You can connect this modem to our FG series or to Niagara.

- Quad-band for global coverage
- GPRS multislots Class 10
- Aluminium chassis industrial design
- Integrated TCP/IP, UDP/IP protocol
- Direct TCP and UDP link / Winsock supported
- Virtual com port support
- Wide voltage supply input from 10 to 30VDC input
- Support data and SMS and dial up mode



## 3G gateway

SH-LS300 Sierra

This 3G modem comes with Ethernet, USB and serial interfaces, as well as digital I/O and GPS. It withstands extreme temperature changes, humidity, shock, and vibration.

- Remotely monitor and control your infrastructure
- Instantly connect your equipment
- Track the location of heavy equipment and assets in the field
- Supports SMS, email, SNMP Trap, Relay Output, GPS Rap Report, Events Protocol Message to Server



## M-Bus protocol converting module

SH-HD67056-B2-X

This converter with integrated level converter allows to integrate M-Bus meters into a BACnet network. It supports BACnet/IP. The connection to BACnet is done over ethernet. M-Bus meters values are converted to BACnet analog inputs, positive integer and DateTime value objects.

- Available for 20, 40, 80 or 160 devices
- Supports up to 1500 BACnet objects
- Converts from Mbus to BACnet IP



## DALI/Modbus TCP gateway

SH-M090

The SH-M090 is a serial converter which acts as a Modbus TCP server and controls a DALI bus with up to 64 DALI devices. It also incorporates a web interface for manual entering of DALI commands inclusive bus configuration and diagnostic commands.

- Integration of DALI light controllers to a Modbus TCP compatible SCADA or PLC
- Configuring and controlling of a DALI bus over a comfortable web interface, even on a remote basis



## Ethernet switch 5/8 ports

SH-EDS-20X

These are entry-level industrial 5 or 8 port ethernet switches that support IEEE 802.3/802.3u/802.3x with 10/100M, full/half-duplex, MDI/MDIX auto-sensing RJ45 ports.

SH-EDS-205 - 5 ethernet ports

SH-EDS-208 - 8 ethernet ports

- 10/100BaseT(X) (RJ45 connector)
- IEEE802.3/802.3u/802.3x support
- Broadcast storm protection
- DIN-rail mounting ability

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