

# Satchwell Product Catalogue

## Controllers and Building Management Systems

Issue: September 2008



Make the most of your energy

**Schneider**  
Electric

### Satchwell Controllers & Building Management Systems

As a global brand of TAC, Satchwell offers owners and users of commercial and public buildings worldwide reliable, energy-efficient and integrated solutions for controlling the heating, cooling, and ventilation systems, and related building services installed in their premises.

The Satchwell range extends from stand-alone compensators and optimisers, typically used to control heating plant in small offices and retail stores, schools, clinics, and similar buildings. At the other end of the scale, computer and web technologies are used to deliver integrated energy-saving solutions to networked building installations spanning the globe.



### TAC – Global Leader in Building IT

TAC is a leading provider of building automation solutions based on Open Integrated Systems for Building IT. TAC's mission is to provide added value through building environment services for indoor climate, security and use of energy, delivered with advanced technology to end users and property owners throughout the world.

With over 80 years of experience in the HVAC, building automation and security markets, TAC employs more than 5,000 people worldwide, with partners and branches in 80 countries. TAC's parent company, Schneider Electric, is the world leader in automation and electricity management, with over 110,000 employees worldwide and operations in 190 countries.

TAC is the fastest-growing, most innovative company in the building automation industry. We are at the forefront of growth because we deliver what our customers want, year after year, building after building.



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## STAND-ALONE CONTROLLERS OVERVIEW

TAC offers a range of stand-alone Satchwell controllers that meet the requirement for energy-efficient heating and ventilation in small and medium sized commercial and public buildings.

The current range of controllers offers a cost-effective upgrade path for customers with equivalent earlier versions. Existing sensors can generally be re-used, minimising disruption, and safeguarding the value of the customers' existing investments.

Ease of installation, commissioning, and day-to-day operation underscore the continued popularity of these well established controllers – summarised below.

### **CSC – Compensator**

For heating systems with outside temperature influence

### **CXR – Reset Controller**

For close control of space temperature by means of a room or return air sensor which resets the supply air temperature control point.

### **CXT – Pulsed Action Controller**

For rapid pulsed control applications (e.g. heat exchangers or ventilation plants) requiring short time constants and rapid response times

### **CZU – Fan Coil Unit Controller**

For modulating control of terminal units in small air conditioning applications

### **CZT – Proportional Controller**

For precise control of applications requiring longer time constants, using 0-10V d.c. actuators

### **SVT – Optimiser**

Provides a variable start time for a heating system dependent on the fall of room temperature during the off period

### **DC1100 and DC1400 – Optimiser/Compensators**

Energy controllers with numerous energy saving functions, including self-adaptive optimisation, boiler rotation and sequencing, and automatic summer/winter clock change.



## STAND-ALONE CONTROLLERS



### FEATURES

- Easy to install and commission
- Shipped with typical default values, reducing commissioning time
- Operates a three port valve or boiler
- Max. return function for District Heating applications
- Adjustable economy function
- Night Set Back (NSB) and set-up/boost inputs
- Flow high limit feature
- User configurable Day/Night plant operation
- Room influence mode selection
- Cost effective upgrade of obsolete Climatronic controllers
- Compatible with previously installed Satchwell sensors

## COMPENSATORS

### CSC Compensator Controllers

CSC Compensators are designed primarily for use in residential/commercial radiator systems to control either a three port mixing valve or a boiler. The controller senses outside temperature and varies the water flow temperature to the radiators. As the outside temperature falls, the radiator temperature is increased, and vice versa.

An optional room temperature sensor can be used to trim the water temperature based on room temperature. The CSC can average up to four room sensors.

	Version	Output
<b>CSC 5252</b>	Mains or 24V output with no clock	Valve or boiler, 24Vac or 230Vac
<b>CSC 5352</b>	Mains or 24V output with clock	Valve or boiler, 24vac or 230Vac, Pump triac, 24Vac, 1A maximum
Data Sheet 2.021		

### INSTALLATION DETAILS

**Power supply:** 230Vac 50/60Hz

**Power failure reserve:** Settings stored in memory, 1 year battery for clock

**Protection class:** IP 30

#### Switched Inputs

Night Set Back (NSB): remote voltage free, make/break contacts. Normally closed.

Set Up (Boost): remote voltage free, make/break contacts. Normally closed.

#### Outputs

Valve actuator or boiler output relays: 2 x single pole ON/OFF (interlocked) 230Vac, 10A resistive, 6A inductive.

Pump Output: 1 x 24Vac triac, 1A (0V switched). Clock version only.

Output Supply: 2 x 24Vac terminals used to power external devices up to a total of 10VA maximum.

### SENSORS

Current Sensor	Type	Replaces
<b>STR600</b>	Space	DRT 3453
<b>STR612</b>	Space	DRT 3451
<b>STC600</b>	Water (Strap on)	DST 0001
<b>STP660</b>	Water (Immersion)	DWT 0001
<b>STO600</b>	Outside	DOT 0002
<b>STR602</b>	Remote setting	RPW 4425

## STAND-ALONE CONTROLLERS



### FEATURES

- Easy to install and commission
- Shipped with typical default values, reducing commissioning time
- Quick set mode allows basic settings to be easily checked and set
- Simple override switch
- Night Set Back (NSB), set-up, summer and night sensor selection switched inputs
- Optional night sensor to protect heater battery from frost damage
- Up to 4 room sensors can be used for average room temperature
- Remote setting input for room set value
- Cost effective upgrade of obsolete Climatronic controllers
- Compatible with previously installed Satchwell sensors

## ROOM RESET CONTROLLER

### CXR AHU Room Reset Controller

The CXR Controller is used to control room temperature by resetting the supply duct air temperature. The room sensor resets the duct supply temperature to achieve the desired room temperature. The room temperature can be sensed in the room or extract duct. The supply duct loop has a purely proportional control action with the room reset being a proportional plus integral control action.

	Control	Output
<b>CXR 5805</b>	Single, two or three stage	24V actuator control
Data Sheet 2.110		

### INSTALLATION DETAILS

**Power supply:** 230Vac 50/60Hz

**Power failure reserve:** settings stored in memory, 1 year battery for clock

**Protection class:** IP 30

#### Switched Inputs

Night Set Back (NSB): remote voltage free, make/break contacts. Normally closed.

Set Up: Voltage free, make/break contacts. Normally closed.

Remote Low Limit (Summer): remote voltage free, make/break contacts. Normally closed.

Night Sensor Selection: Voltage free, make/break contacts. Normally closed.

#### Outputs

Valve Actuator Output Triacs: 2 x 24Vac triacs, 1A (0V switched and software interlocked).

Output Supply: 2 x 24Vac terminals used to power the actuator up to a total of 10VA maximum.

### SENSORS

Current Sensor	Type	Replaces
<b>STR602</b>	Space	DRT 3651
<b>STR600</b>	Space	DRT 3453
<b>STD660</b>	Duct	DDT 0001
<b>STP660</b>	Water (Immersion)	DWT 0001
<b>STC600</b>	Water (Strap on)	DST 0001
<b>STR602</b>	Remote setting	RPW 4425

## STAND-ALONE CONTROLLERS



### FEATURES

- Easy to install and commission
- Shipped with typical default values, decreasing commissioning time
- Quick set mode allows basic settings to be easily checked and set
- Simple override switch
- Operates single or two stage systems
- Night Set Back (NSB) and set-up inputs
- Remote setting input for room set value
- Cost effective upgrade of obsolete Climatronic controllers
- Compatible with previously installed Satchwell sensors

## PID PULSE CONTROLLER

### CXT PID Pulse 24V Controller

The CXT Controller is primarily designed to control systems with short time constants and fast response times. This would typically be the control of heat exchangers, non storage calorifiers or ventilation plant where the sensor is placed directly in the controlled medium. The CXT operates 24Vac actuators on two or three port valves. It is capable of operating single or two stage systems.

	Control	Output
<b>CXT 5605</b>	Single or two stage	24V actuator control
Data Sheet 2.101		

### INSTALLATION DETAILS

**Power supply:** 230Vac (+10%, -6%) 50/60Hz

**Power failure reserve:** Settings stored in memory, 1 year battery for clock

**Protection class:** IP 30

#### Switched Inputs

Night Set Back (NSB): remote voltage free, make/break contacts. Normally closed.

Set Up: remote voltage free, make/break contacts. Normally closed.

#### Outputs

Valve Actuator Output Triacs: 2 x 24Vac triacs, 1A (0V switched and software interlocked).

Output Supply: 2 x 24Vac terminals used to power the actuator up to a total of 10VA maximum.

### SENSORS

Current Sensor	Type	Replaces
<b>STD660</b>	Duct	DDT 0001
<b>STP660</b>	Water (Immersion)	DWT 0001
<b>STC600</b>	Water (Strap on)	DST 0001
<b>STR602</b>	Remote setting	RPW 4425

## STAND-ALONE CONTROLLERS



### FEATURES

- Easy to install and commission
- Three wire connection to actuators
- Optional auto changeover
- Minimal commissioning time
- Mount directly on standard DIN rail or on the terminal unit casing

## FAN COIL CONTROLLER

### CZU Fan Coil Unit Controller

The CZU is an Electronic Modulating Controller for the control of terminal units or fan coils in air conditioning systems serving small zones of buildings such as individual offices and hotel bedrooms.

	Control	Range	Output
<b>CZU 4201</b>	2-stage heating and cooling with dead zone	10 to 40°C	24V actuator control
Data Sheet 2.201			

### INSTALLATION DETAILS

**Power supply:** 24Vac ( $\pm 10\%$ ) 50/60Hz

**Protection class:** IP 20

**Override Inputs:** Pipe surface thermostat

#### Adjustments

Set Value: 10 to 40°C

Dead Zone: 0 to 6°K, Actuator Stroke Setting: 12.5 to 75mm

**Outputs:** 1 or 2 stage pulsed (modulated) switched outputs. Up to 7 AVU / AVUX actuators per stage

### ACTUATORS

	Power Supply	Control Action	Thrust	Data Sheet
<b>AVU 2201</b>	24Vac	Reversing-modulating	105N	2.201
<b>AVUX 5202</b>	24Vac	Reversing-modulating	220N	3.005

### SENSORS

Current Sensor	Type	Replaces
<b>STR600</b>	Space	DRT 3453
<b>STR612</b>	Space	DRT 3451
<b>STD660</b>	Duct	DDT 0001
<b>STD670</b>	Duct	DDU 0001 / 1803

## STAND-ALONE CONTROLLERS



### FEATURES

- Easy to install and commission
- Shipped with typical default values, decreasing commissioning time
- Quick set mode allows basic settings to be easily checked and set
- Simple override switch
- Operates single or two stage systems
- Standard 0 to 10Vdc output
- Night Set Back (NSB) and set-up inputs
- Compatible with previously installed Satchwell sensors
- Remote setting input
- Cost effective upgrade of obsolete Climatronic controllers



### FEATURES

- Easy installation – only one sensor required (packed with the controller)
- Programme override switch
- Choice of day control by separate compensator or built-in on/off day control
- Minimum night 'inside' temperature protection
- Analogue and Digital clock versions available

## PID 0-10VDC CONTROLLER

### CZT PID 0-10Vdc Controller

The CZT Controller is designed for use in systems such as room or return water control. It can be used for single or two stage control and is suitable for use with 0 to 10Vdc actuators.

	Control	Output
CZT 5305	Single or two stage	0 to 10Vdc for heating and cooling
Data Sheet 2.105		

### INSTALLATION DETAILS

**Power supply:** 230Vac (+10%, -6%) 50/60Hz

**Power failure reserve:** Settings stored in memory, 1 year battery for clock

**Protection class:** IP 30

#### Switched Inputs

Night Set Back (NSB): Voltage free, make/break contacts. Normally closed.

Set Up: remote voltage free, make/break contacts. Normally closed.

#### Outputs

Control outputs: 2 x 0 to 10Vdc outputs for heating and cooling.

Output Supply: 2 x 24Vac terminals used to power the actuator(s) up to a total of 10VA maximum.

### SENSORS

Current Sensor	Type	Replaces
STR602	Space	DRT 3651
STR600	Space	DRT 3453
STR612	Space	DRT 3451
STD660	Duct	DDT 0001
STP660	Water (Immersion)	DWT 0001
STR602	Remote setting	RPW 4425

## 7-DAY OPTIMISER

### SVT 7-day Optimiser

This energy-saving controller can replace a conventional time switch on a heating system and provides a variable start time dependent on the fall of room temperature during the off period.

It is used to switch systems on and off and will substantially reduce energy consumption compared with fixed time starting. In all but the very coldest weather the start time is delayed until the latest time consistent with the amount of heat necessary to reach the required temperature at occupancy time.

	Version	Output relays
SVT 4201	Analogue clock	Plant, 250V, 2A (1A inductive)
SVT 4251	Digital clock	Control, 250V, 2A (1A inductive)
Data Sheet 2.001		

### INSTALLATION DETAILS

**Power supply:** 230V 50/60Hz

**Power failure reserve:** For clock, 100 hours

**Protection class:** IP 41

**Associated Sensor:** STR614 (included with controller)

## STAND-ALONE CONTROLLERS



### FEATURES

- Easy set-up – these controllers are self-configuring, matching the connected sensors
- Easy to use – simple, intuitive user interface
- Flexible application – caters for a wide variety of control schemes
- Energy efficient – optimiser function delivers consistent energy savings
- Trouble-free operation – proven reliability minimises problems and ensures peace of mind

## OPTIMISER/COMPENSATORS

### DC1100 and DC1400 Optimiser/Compensators

The DC1100 and DC1400 Energy Controllers are self-configuring optimiser / compensators, capable of controlling one or two boilers in sequence with hot water supply time control. Designed for easy installation and operation in small/medium commercial properties, they are a cost-effective option for achieving significant improvements in energy use.

The DC 1100 differs from the DC1400 in that it supports legacy Drayton brand sensors. The DC1400 is compatible with legacy Satchwell Drayton sensors, making it the ideal upgrade replacement for CMC and CSMC controllers.

	Control	Output
<b>DC1100</b>	1 or 2 boilers & hot water	230Vac actuator control
<b>DC1400</b>	1 or 2 boilers & hot water	230Vac actuator control
Data Sheet: 2.042 (DC1100)		
Data Sheet 2.044 (DC1400)		

### INSTALLATION DETAILS

**Power supply:** 230Vac, 15VA (50/60Hz)

**Relay ratings:** SPNO 230Vac, 3A resistive, 1A inductive

**Operating conditions:** 0 to 50°C, 5 to 95% RH non-condensing

**Protection class:** IP40

**Mounting:** Panel or surface mount

**Inputs:** Outside air temperature, Boiler return sensor, Boiler flow sensor, Mixed flow sensor, Space sensors (2 max.), Digital input to provide for controller override

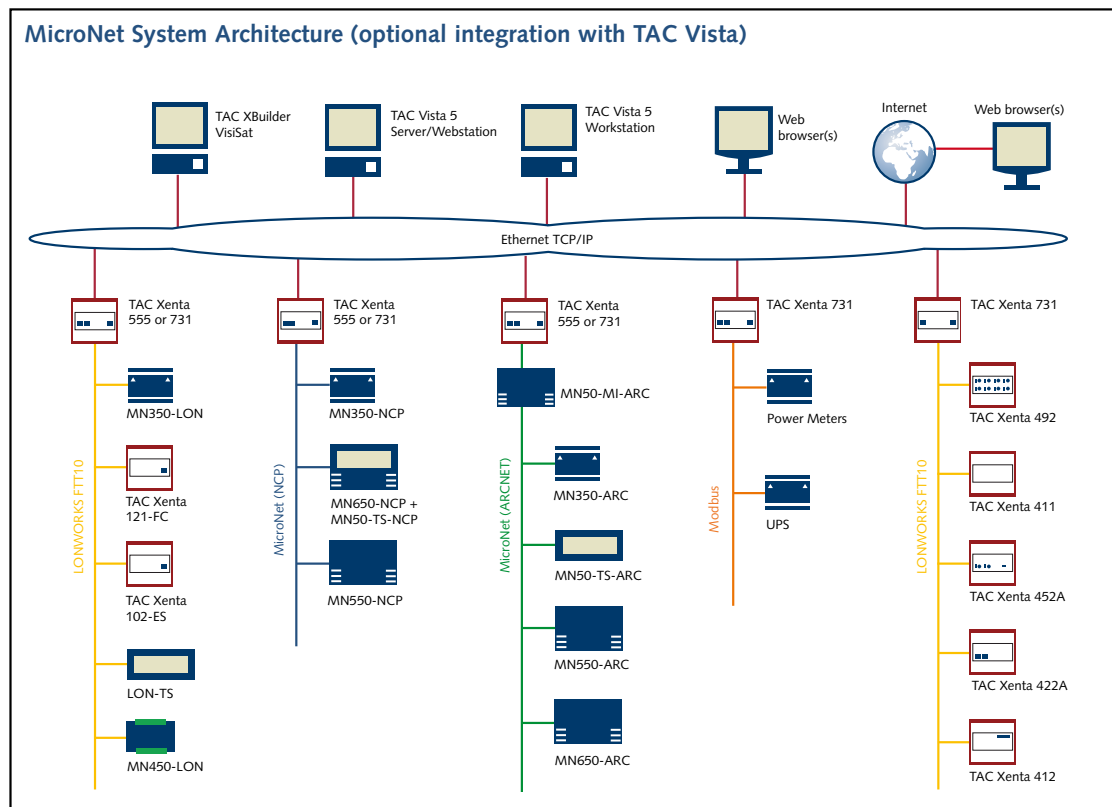
**Outputs:** Boiler No. 1, Boiler No. 2, Pump, Valve open, Valve close, Hot water

### SENSORS

Controller	Current Sensor	Type	Replaces
<b>DC1100</b>	<b>STR600D</b>	Space	A7O1
	<b>STO600D</b>	Outdoor	A7O2
	<b>STP600D</b>	Immersion	A7O3
	<b>STC600D</b>	Strap-on	A7O4
<b>DC1400</b>	<b>STR600</b>	Space	DRT 3453
	<b>STO600</b>	Outside	DOT 0001/ 0002
	<b>STP660</b>	Water (Immersion)	DWT 0001
	<b>STC600</b>	Water (Strap on)	DST 0001

# SATCHWELL MICRONET – SYSTEM OVERVIEW

MicroNet is an easy-to-use, scalable and modular building automation system, with flexible communication protocols and intuitive engineering tools. It offers unique benefits for small to medium sized buildings and complexes, providing optimum plant performance and ongoing energy savings.



## STAND-ALONE OR INTEGRATED OPERATION

MicroNet fully programmable controllers can operate in stand-alone mode with a variety of user interfaces – including the highly popular MN Touch graphical touch screen – or can be integrated in local or wide area networks.

## MICRONET WEB SOLUTION

The addition of the TAC Xenta 555 and 731 embedded web servers offers both new and existing MicroNet users the power of the internet and optional interconnection to TAC Vista's integrated BMS and security platform. IP Tunneling, available with VisiSat version 2.1 enables remote reprogramming and diagnostics, minimising the cost and inconvenience of returning to site.

## MICRONET 50 SERIES

MicroNet 50 Series, the latest and current range of MicroNet controllers, displays and routers, provides greater power, flexibility, and resilience to MicroNet system hardware, and the associated VisiSat engineering tool.

## FLEXIBLE 'BUS-DU-JOUR'® COMMUNICATIONS

MicroNet gives specifiers the flexibility to choose the communications platform – NCP, ARCNET or LONWORKS – best suited to their needs. By using the flexibility of the Xenta 555 / 731, they can even connect networks with different communication protocols – for example, when bringing together different buildings with existing installations that have previously operated in isolation from each other.



**FEATURES**

- LONWORKS FTT-10, ARCNET and NCP communications options – Bus-du-jour
- Fully programmable using graphical objects
- Three built-in 230Vac relays
- 230Vac or 24Vac power supply combined with compact size
- Time schedules
- Switched outputs may be configured as stepped outputs (including plant rotation), actuator outputs or outputs for lights and fans
- Eight fully programmable Inputs: digital, analogue, 0 to 10V, resistive 0 to 10Ω
- Supports S-Link sensors



**FEATURES**

- LONWORKS FTT-10, ARCNET and NCP communications options – Bus-du-jour concept
- Fully programmable using graphical objects
- Intelligent multi-loop controller – up to 7 PID control loops
- Time schedules
- Proportional, integral and derivative control actions
- 0 to 10Vdc for stepped fan control
- Averaging module for analogue inputs
- Six easily configurable Inputs: digital, analogue, 0 to 10V, resistive 0 to 10kΩ
- Supports S-Link sensors

**MN350 Programmable Controller**

The MN350 controller is designed for unitary control, heating, cooling and special applications that may require built-in transformers and relays. The controller can function in stand-alone mode or as part of a networked system using Bus-du-jour communication options.

	Controller	Comms Protocol	Inputs/outputs
<b>MN350-ARC</b>	Controller MN350-ARC	ARCNET	8 x universal inputs
<b>MN350-LON</b>	Controller MN350-LON	LON	4 x triac outputs
<b>MN350-NCP</b>	Controller MN350-NCP	NCP	3 x relay outputs
Data Sheet 10.151			

**INSTALLATION DETAILS**

**Power supply:** 24Vac or 230Vac, 50/60Hz  
**Consumption:** 12VA  
**Protection class:** IP 20  
**Mounting:** Wall or 35mm DIN rail  
**Sensor Inputs:** MN S-Link digital sensor link  
**Inputs:** 8 universal inputs (digital, resistive, 0 to 10Vdc)  
**Outputs:** 4 triac outputs for switching 24Vac, 3 SPDT 230Vac relays

(Line Relays), Current ratings (for triac outputs): 6Va at 230Vac supply, 18VA at 24Vac supply

**Power failure reserve:** Controller EEPROM preserves memory for 10 years under normal conditions of use. The software clock will stop during a power failure. However, if the controller has been fitted with an optional RTC card, time is maintained.

**ACCESSORIES** – see page 16

**MN450 Programmable Controller**

The MN450 controller is designed for rooftop, unit vent, air handling unit (AHU), and central heating and cooling applications. The controller can function in stand-alone mode or as part of a networked system using Bus-du-jour communication options. An optional Real Time Clock Card can be fitted to the MN450 on an NCP network.

	Controller	Comms Protocol	Inputs/outputs
<b>MN450-ARC</b>	Controller MN450-ARC	ARCNET	6 x universal inputs
<b>MN450-LON</b>	Controller MN450-LON	LON	6 x digital outputs
<b>MN450-NCP</b>	Controller MN450-NCP	NCP	3 x analogue outputs
Data Sheet 10.152			

**INSTALLATION DETAILS**

**Power supply:** 24Vac, 50/60Hz  
**Consumption:** 10VA  
**Protection class:** IP 20  
**Mounting:** Wall or 35mm DIN rail  
**Inputs:** 6 universal inputs (digital, resistive, 0 to 10Vdc)  
**Outputs:** 6 digital outputs (triac) for switching 24Vac, 3 analogue outputs (0 to 10Vdc), Current ratings for triacs:

18VA at 24Vac. Also has a 15Vdc power supply output capable of sourcing 25mA

**Power failure reserve:** Controller EEPROM preserves memory for 10 years under normal conditions of use. The software clock will stop during a power failure. However, if the controller has been fitted with an optional RTC card, time is maintained.

**ACCESSORIES** – see page 16



**FEATURES**

- LONWORKS FTT-10, ARCNET and NCP communications options
- Fully programmable using graphical objects
- Intelligent multi-loop controller – up to 8 PID control loops
- Optimisation module and time schedules
- Proportional, integral and derivative control actions
- Ten fully configurable Inputs: digital, analogue 0 to 10V, resistive 0 to 10kΩ
- Six built-in line voltage relays, 230Vac 5A resistive
- Optional LCD Display for interrogation of local parameters
- Supports S-Link sensors

**MN550 Programmable controller**

The MN550 controller is designed for district heating, boiler plant, air handling unit (AHU), and zone heating and cooling applications.

The controller can function in stand-alone mode or as part of a networked system using Bus-du-jour communication options. An optional Real Time Clock Card (RTC) can be fitted to the MN550 on an NCP network. Other options include a remote mounting Touch Screen Display which allows the user to view, query and edit controller properties. An LCD display option is also available to review the controller parameters locally.

	Controller	Comms Protocol	Inputs/outputs
<b>MN550-ARC</b>	Controller MN550-ARC	ARCNET	2 x digital inputs 10 x universal inputs 6 x relay outputs 4 x analogue outputs
<b>MN550-LON</b>	Controller MN550-LON	LON	
<b>MN550-NCP</b>	Controller MN550-NCP	NCP	
<b>MN550-XCOM</b>	Controller MN550-XCOM (auxillary comms for LAN / LCD)	2 x NCP	
Data Sheet 10.153			

**INSTALLATION DETAILS**

**Power supply:** 24Vac, 50/60Hz

**Consumption:** 12VA

**Protection class:** IP 40

**Mounting:** Wall or 35mm DIN rail

**Inputs:** 2 digital pulse counting (10Hz) inputs, 10 universal inputs (digital, resistive, 0 to 10Vdc)

**Outputs:** 6 digital outputs (Line Relay) 5A resistive at 230Vac. 4 analogue outputs (0 to 10Vdc)

**Power failure reserve:** Controller EEPROM preserves memory for 10 years under normal conditions of use. The software clock will stop during a power failure. If the controller has been fitted with an optional RTC card, time is maintained.

**ACCESSORIES** – see also page 16

**MN-DK** Display Wall Mounting Kit

**MN-TK** Trunking Mounting Kit



**FEATURES**

- LONWORKS FTT-10, ARCNET and NCP communications options
- Fully programmable using graphical objects
- Intelligent multi-loop controller – up to 8 PID control loops
- Optimisation module
- Time schedules for plant and controller switching
- Proportional, integral and derivative control actions can be individually set using controller objects
- Twelve easily configurable inputs, 8 digital inputs
- Eight triac outputs, four 0 to 10Vdc outputs
- Supports S-Link sensors

**MN650 Programmable Controller**

The MN650 Controller is designed for rooftop, unit vent, air handling unit (AHU) and central heating and cooling applications.

The controller can function in stand-alone mode or as part of a networked system using Bus-du-jour communication options. An optional Real Time Clock Card can be fitted to the MN650 on an NCP network. Other options include a touch screen and an LCD display.

	Controller	Comms Protocol	Inputs/outputs
<b>MN650-ARC</b>	Controller MN650-ARC	ARCNET	8 x digital inputs
<b>MN650-LON</b>	Controller MN650-LON	LON	12 x universal inputs
<b>MN650-NCP</b>	Controller MN650-NCP	NCP	8 x digital outputs
<b>MN650-XCOM</b>	Controller MN650-XCOM (auxillary comms for LAN / LCD)	2 x NCP	4 x analogue outputs
Data Sheet 10.154			

**INSTALLATION DETAILS**

**Power supply:** 24Vac, 50/60Hz

**Consumption:** 15VA

**Protection class:** IP 40

**Mounting:** Wall or 35mm DIN rail

**Inputs:** 8 digital inputs, 12 universal inputs (digital, resistive, 0 to 10Vdc)

**Outputs:** 8 digital outputs (triac). Current ratings 1A at 24Vac (24VA).

4 analogue outputs (0 to 10V)

**Power failure reserve:** Controller EEPROM preserves memory for 10 years under normal conditions of use. The software clock will stop during a power failure. If the controller has been fitted with an optional RTC card, time is maintained.

**ACCESSORIES** – see also page 16

**MN-DK** Display Wall Mounting Kit

**MN-TK** Trunking Mounting Kit

**Accessories for MicroNet Controllers**

**LIB-4-485** RS 232/RS 485 Converter to connect PC to NCP network

**MN S-Link** MicroNet Sensors

**MNA-C** ARCNET Plug-in Card

**MNN-COM** NCP Plug-in Card for MN500 or MN620 only

**MN50-MI-RTR** ARCNET Router

**MNL-C** LONWORKS Plug-in Card

**MN50-MI-ARC** MicroNet Manager Interface

**MN50-RTC** Real Time Clock Card

**MN-VSCORE** VisiSat Configuration Tool (requires Visio 2003 software), core software (NCP, SNP & ARCNET)

**MN-VSLON** VisiSat LON plug-in (requires MN-VSCORE), required for Bus-du-jour LON devices

**MN50-LCD** MicroNet LCD Display

**MN50-LCDP** MicroNet LCD Display (for panel mounting)

**MN50-TS-ARC** MicroNet Touch Screen Display

**MN50-TS-LON** MicroNet Touch Screen Display

**MN50-TS-NCP** MicroNet Touch Screen Display

**MN50-TSP-ARC** MicroNet Touch Screen Display (for panel mounting)

**MN50-TSP-LON** MicroNet Touch Screen Display (for panel mounting)

**MN50-TSP-NCP** MicroNet Touch Screen Display (for panel mounting)



### FEATURES

- NCP, ARCNET and LONWORKS Communications options
- Intuitive, graphics-based menu system
- Unique display for any LONWORKS systems
- Back-lighted graphic LCD Interface
- Easy direct mounting to MN550 and MN650 controllers used on an NCP network
- Battery backed up, built-in Real Time Clock
- Secure password protection
- Can be connected directly to a network
- Screen configuration saved on EEPROM.
- Real time clock backed up by Lithium battery (350 days life at continuous discharge).
- Connection to MicroNet View, TAC Xenta 555 web server and optionally, TAC Vista.

### MN50 Touch Screen Display

The MN50 Touch Screen Display is a graphical LCD display that allows a user to monitor and configure parameters for multiple controllers on a Native Communications Protocol (NCP) or LON or ARCNET communications network.

The Touch Screen features continuous alarm polling and data passing to all connected controllers on a network or sub-network. It is configured using the VisiSat Tool for parameter monitoring and alarm functions.

A Touch Screen can be mounted directly on the MN550 and MN650 controller when used on an NCP network. Alternatively, it can be mounted on a control panel and connected to a controller, or connected directly to a compatible network.

The Touch Screen features a built-in Real Time Clock (powered separately by a Lithium battery) that can be configured to be a master timekeeper for a network.

The touch-sensitive keypad works easily with the screen's intuitive graphical representation of common control parameters. The display shows the user 16 menu items, each of which gives access to 16 separate controller parameters (8 for the LON Touch Screen).

	Description
<b>MN50-TS-ARC</b>	MN50 Series ARCNET Touch Screen Display
<b>MN50-TS-LON</b>	MN50 Series LON Touch Screen Display
<b>MN50-TS-NCP</b>	MN50 Series NCP Touch Screen
<b>MN50-TSP-ARC</b>	MN50 Series ARCNET Touch Screen Display (panel mounting)
<b>MN50-TSP-LON</b>	MN50 Series LON Touch Screen Display (panel mounting)
<b>MN50-TSP-NCP</b>	MN50 Series NCP Touch Screen Display (panel mounting)
Data Sheet 10.050	

### INSTALLATION DETAILS

**Power supply:** 24Vac

**Maximum Power Consumption:** MN50-TS-NCP 5VA, MN50-TS-ARC 6.5VA, MN50-TS-LON 8VA

**Power failure reserve:** EEPROM technology. Battery backed up real time clock

### ACCESSORIES

**MN-DK** Wall Mounting Kit for Touch Screen



**FEATURES**

- Clear, high contrast LCD Display
- Intuitive, text based menu system
- Fully programmable with VisiSat Configuration Tool
- Built-in Real Time Clock with battery back-up
- Can be directly mounted on an MN550 or an MN650
- Can be remotely mounted and connected to an MN350, MN450, MN550 or MN650
- Screen configuration saved on EEPROM.
- Real time clock backed up by Lithium battery (350 days life at continuous discharge).
- Wall or panel mounting options

**MN50 LCD Display**

The MN50 LCD is a menu driven LCD display that allows a user to monitor and configure parameters of an MN350, MN450, MN550 or MN650 controller. It is fully programmable using the VisiSat Configuration Tool.

The LCD can be used to interrogate and alter temperature inputs, plant conditions, plant overrides, and time and holiday schedules that reside on MicroNet controllers. Up to 246 lines of data can be displayed.

The MN50-LCDP can be mounted on a control panel and connected to a controller. The MN50-LCD and MN50-LCDP models can be housed in a wall mounting unit, remotely from the controller, and can also be mounted on an MN550 or an MN650 controller.

When the LCD is mounted remotely, it may be connected to an MN350-NCP, MN450-NCP, MN550-NCP or MN650-NCP controller operating in stand-alone mode. In addition, the LCD can be connected to an MN550-ARC or MN650-ARC (for ARCNET networks) or an MN550-XCOM or MN650-XCOM (for NCP networks).

The LCD can be mounted on any MN550 or MN650 controller using the ribbon cable supplied. The LCD features a built-in Real Time Clock, powered separately by a Lithium battery to provide complete stand-alone operation.

	Description
<b>MN50-LCD</b>	MicroNet LCD Display
<b>MN50-LCDP</b>	MicroNet LCD Display (Panel Mounting)
Data Sheet 10.060	

**INSTALLATION DETAILS**

**Power supply:** 24Vac

**Consumption:** 4 VA max

**Power failure reserve:** EEPROM technology. Battery backed up real time clock

**ACCESSORIES**

**MN-DK** Wall Mounting Kit for LCD display



**FEATURES**

- Cost effective solution for new and existing installations
- Web access to SNP and 'Bus-du-jour'® networks and controllers – NCP, ARCNET and LON
- Accessible from anywhere at any time through a web browser
- Rich, dynamic graphics
- Remote monitoring and management of alarms, events, and trend logs
- Comprehensive security features
- Remote configuration capability
- VisiSat tunneling support
- No extra or specialist software required

The TAC Xenta 555 and 731 are multi-functional presentation systems with a built-in (embedded) web server. They offer MicroNet and Satchnet users a feature rich web solution by providing secure access to MicroNet and Satchnet networks via a web browser. All functions are easy to use and accessible via intranets and the Internet – around the clock, anywhere in the world.

As autonomous user interfaces, the Xenta 555 and 731 offer broader functionality than any other product of their kind – including complete remote configuration, trend logging, time scheduling, alarm and event monitoring. Site information is displayed dynamically through powerful web graphics pages, with continuous updating of live values in real time.

The Xenta 555 / 731 can also act as portals to TAC's powerful Vista BMS, offering a comprehensive and integrated solution for building management and security.

The Xenta 731 provides in addition a direct control capability and enhanced network support.

**OTHER SUPPORTED PRODUCTS**

- MNN-30-100
- MNN-44-100
- MNN-50-100
- MNN-62-100
- MNN-LCD-100
- MNN-LCDP-100
- MNN-TS-100
- MNN-TSP-100
- MNN-MI-100
- MNA-R10
- MNL-TSP-100
- IAC 400/420/600

- IAC Touch Screen
- MIU IV
- UniFact
- UniFact Pro
- MMC 3601/4601

**COMPATIBILITY**

- VisiSat v.2.1 or later
- TAC XBuilder v.5.0.2 or later
- TAC Vista v.5.0.2 or later

**WEB INTERFACE**

Optimised for Microsoft Internet Explorer Version 6.0 or later

	Part Number	Supported Network Protocols
<b>TAC Xenta 555</b>	0-073-0825	LON, ARCNET, NCP, SNP
<b>TAC Xenta 731</b>	0-073-0165	LON, ARCNET, NCP, SNP, I/Net, Modbus
<b>Terminal Part TAC Xenta 400</b>	0-073-0902	
<b>TAC Xenta: Programming Serial Kit</b>	0-073-0920	
Data Sheet Xenta 555: 03-00044-01-en		
Data Sheet Xenta 731: 03-00046-01-en		

**INSTALLATION DETAILS**

**Supply voltage:** 24 V AC ±20%, 50/60 Hz or 19–40 V DC

**Power consumption:** max. 5 W

**Transformer sizing:** 5 VA

**Power Failure Protection:** Settings, e.g. configuration and web pages, are stored in the non-volatile (flash) memory and will not be lost after a power failure.



**FEATURES**

- Autoanswer operation on modem sites
- Priority alarms autodialed immediately. Service alarms retrieved at next contact (MicroNet View) with the MN50-MI
- Password protection
- Stores up to four phone numbers
- Retains telephone numbers and passwords in flash memory during a power failure
- Autodials if a controller goes off line
- Real Time Clock
- 2500 logging samples / alarms



**FEATURES**

- Expands number of network devices
- Extends network length
- Parameter transfer between sub-LANs
- Provides opto-isolation between networks

**MN50 Manager Interface**

The MicroNet Manager Interface (MI) provides network-level supervision functions for a network of MicroNet controllers and displays, providing LAN controllers with time updates. MN-MI features two RS 232 ports that can be connected to a PC running VisiSat Configuration Tool or MicroNet View graphical user interface. One of the ports can be connected to a modem/Ethernet device server on a remote site to provide WAN connectivity. MN-MI can be configured to monitor alarm conditions and collect data logs.

	Controller	Comms protocol	Number of devices
<b>MN50-MI-NCP</b>	MicroNet Manager Interface	NCP	20 x 61 max (per network)
<b>MN50-MI-ARC</b>		ARCNET	31 x 94 max (per network)
Data Sheet 10.217			

**INSTALLATION DETAILS**

**Power supply:** 24Vac, 50/60hz  
**Consumption:** MN50-MI-NCP: 4.4VA  
 MN50-MI-ARC: 4.7VA  
**Protection class:** IP40  
**Mounting:** wall or 35mm DIN rail  
**Number and Type of PC Communication Ports –** 2 Off RS 232  
**Maximum RS 232 Cable Length –** 15m  
**Power failure reserve:**  
 Non-rechargeable Lithium battery

continues to run the clock and supports the unit's RAM. Current logs and alarms in the Network Interface are preserved for up to 350 days.

**ACCESSORIES**

**CBL-002 RS 232 D8/D9** cable from PC to MN50-MI-NCP/ARC  
**MNA-C ARCNET** Communications card  
**MNR-C ARCNET** Router Communications card

**MN50 ARCNET Router**

This Router provides the means to extend an ARCNET network of MicroNet controllers and displays.

Up to 31 ARCNET sub-LANs can sit on the back-bone. Routers can also provide opto-isolation between sub-LANs.

	Controller	Comms protocol	Number of devices
<b>MN50-MI-RTR</b>	MicroNet ARCNET Router	ARCNET	31 x 94 max (per network)
Data Sheet 10.217			

**INSTALLATION DETAILS**

**Power supply:** 24Vac, 50/60hz  
**Consumption:** 5.0VA  
**Protection class:** IP40  
**Mounting:** wall or 35mm DIN rail  
**Number and Type of PC Communication Ports:** 2 Off RS 232  
**Maximum RS 232 Cable Length:** 15m  
**Power failure reserve:**  
 Non-rechargeable Lithium battery

continues to run the clock and supports the unit's RAM. Current logs and alarms in the Network Interface are preserved for up to 350 days.

**ACCESSORIES**

**MNA-C ARCNET** Communications card  
**MNR-C ARCNET** Router Communications card



#### FEATURES

- Aesthetically styled, low profile packaging
- Digital zone temperature indication with variable resolution and unit of measure
- Self-compensating temperature conversions remove the need for periodic calibration
- Override buttons allow the user to switch to operation mode for out of hours occupation
- Displays selected system values such as setpoint, external air temperature and operating mode
- Enables the alteration of operating modes

#### MN S-Link Digital Temperature Sensors

The MicroNet MN S-Link Series is a family of digital wall temperature sensors for use with MicroNet Controllers. These sensors feature a Sensor Link (S-LK) communication protocol which provides a simple two-wire interface for power and exchange of sensor and sub-base information. Sub-base information includes selecting setpoint, fan speed, operating mode, or emergency heat. Available in six models, MicroNet Sensors provide an integral analogue-to-digital conversion for elimination of sensor-to-controller and wire resistance offset.

	Description	Keypad	Display
<b>MN-S1</b>	Sensor only	none	none
<b>MN-S2</b>	Sensor with override	1 button	LED override status indication
<b>MN-S3</b>	Sensor with setpoint adjustment and override	2 buttons	LCD and LED override status indication
<b>MN-S4</b>	Sensor with setpoint, override and controller mode functions	5 buttons	LCD and LED override status indication
<b>MN-S4-FCS</b>	Sensor with setpoint, on/off and fan speed functions	5 buttons	LCD and LED fan status indication
<b>MN-S5</b>	Sensor with setpoint, override controller mode functions and emergency heat key/indication	6 buttons	LCD and LED override status indication
Data Sheet 10.000			

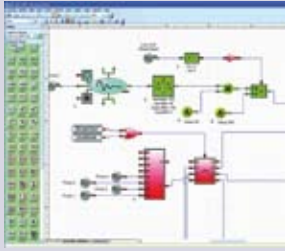
#### INSTALLATION DETAILS

**Power supply:** Powered from the controller

**Protection class:** IP 20

**Ambient limits:** Operating temperature 0 to 50°C, humidity 5 to 95% rh, non-condensing

## VISISAT CONFIGURATION TOOL



### FEATURES

- Runs under Visio 2003
- Compatible with Windows XP Professional
- Controllers are programmed using graphical objects in "Bubbleland"
- Powerful and intuitive configuration of interfaces
- Unique mechanism to change LON controller profiles
- 'Custom' object creation for standard repeated applications
- Configuration report generation
- Autogeneration of wiring diagrams
- Multiple trends on single page.

### VisiSat 2.1 Configuration Tool

The VisiSat 2.1 Configuration Tool is a flexible, system engineering tool used to configure MicroNet MN50 Series controllers. It is compatible with Microsoft® Windows® XP Professional, and uses the Visio® 2003 32-bit drawing interface for graphic representation of control applications and control objects. VisiSat 2.1 can also configure older MicroNet and Satchnet (SNP) controllers.

VisiSat 2.1 features easily-understood graphic representations of common control algorithms and functions and easy-to-use 'wizards' that automate routine jobs. It can be used to create points lists for export to XBuilder, the programming tool used to create web pages in the TAC Xenta 555 / 731 web server. It is also possible to engineer a MicroNet scheme remotely, by connecting the VisiSat server via IP Tunnel (Ethernet) to a TAC Xenta 555 / 731 attached to the MicroNet network (not LON variants).

VisiSat 2.1 can create configuration reports and wiring diagrams, and can be used to produce panel drawings and customised objects for repeated control schemes.

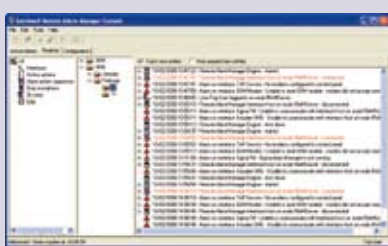
	Description	Type
<b>MN-VSCORE</b>	VisiSat 2.1	Configuration tool, core software
<b>MN-VSCORE-2U</b>	VisiSat 2.1	MicroNet VisiSat Version 2 upgrade
<b>MN-VSLON</b>	Plug-in	Plug-in option for LON devices
Data Sheet 10.202		

### HARDWARE SPECIFICATIONS

See data sheet for minimum hardware requirements.

### ACCESSORIES

**LIB-4-485** RS 232/RS 485 Converter to connect PC to NCP network



### FEATURES

- Alarm information collected automatically from Micronet View
- Output drivers to fax, remote printer, Web pages, SMS messaging or E-mail
- Core software includes Web and WAP interfaces
- Self-monitoring of system hardware and software
- Console for system configuration and full alarm history

## REMOTE ALARM MANAGER

### Remote Alarm Manager

Remote Alarm Manager is a powerful software package for routing alarm information to management and service personnel. It integrates seamlessly to Micronet View and includes comprehensive alarm tracking and history.

Alarms can be acknowledged remotely from a GSM or WAP-enabled mobile phone or from a Web browser. Message content can be customised and alarms can be routed according to alarm priority, type of alarm and time of day.

Remote Alarm Manager is an essential system for organisation that use mobile maintenance staff, and where different maintenance personnel are on duty at different times of the day or week. Remote Alarm Manager can ensure that the correct personnel are made immediately aware of maintenance tasks, and that alarm conditions are resolved as quickly as possible.

	Description	Type
<b>MN-RAM</b>	Remote Alarm Manager, core	System software, includes 1 output driver
<b>MN-RAM-OUT</b>	Output drivers	Additional output interface (see data sheet)
Data Sheet 11.001		

### HARDWARE SPECIFICATIONS

See data sheet for minimum hardware requirements.



**FEATURES**

**MicroNet View**

- Real-time data on active, multi-media graphical displays
- Provides intuitive operation via customised control panels
- Support for DDE, and fast DDE standards
- Supports the use of bitmaps, photos, and other graphic formats when designing the network reporting display
- Comprehensive logging and alarm management utilities

**MicroNet View Pro**

- Allows graphics generation and development of the application
- Powerful scripting editor for creating and performing system tasks
- Use of ActiveX® Controls and Wizards makes the system configuration easy
- Allows monitoring and editing of system variables

**Micronet View**

MicroNet View is a software platform that provides an intuitive, graphical interface for network-level supervisory and control functions. MicroNet View works on any of the MicroNet network options: LONWORKS® FTT-10 Free Topology, NCP (Native Communications Protocol), and ARCNET, and works with the MicroNet family of controllers, sensors and displays. MicroNet View also supports Satchnet range products such as IAC controllers, and third party products such as chillers, boilers and access control systems.

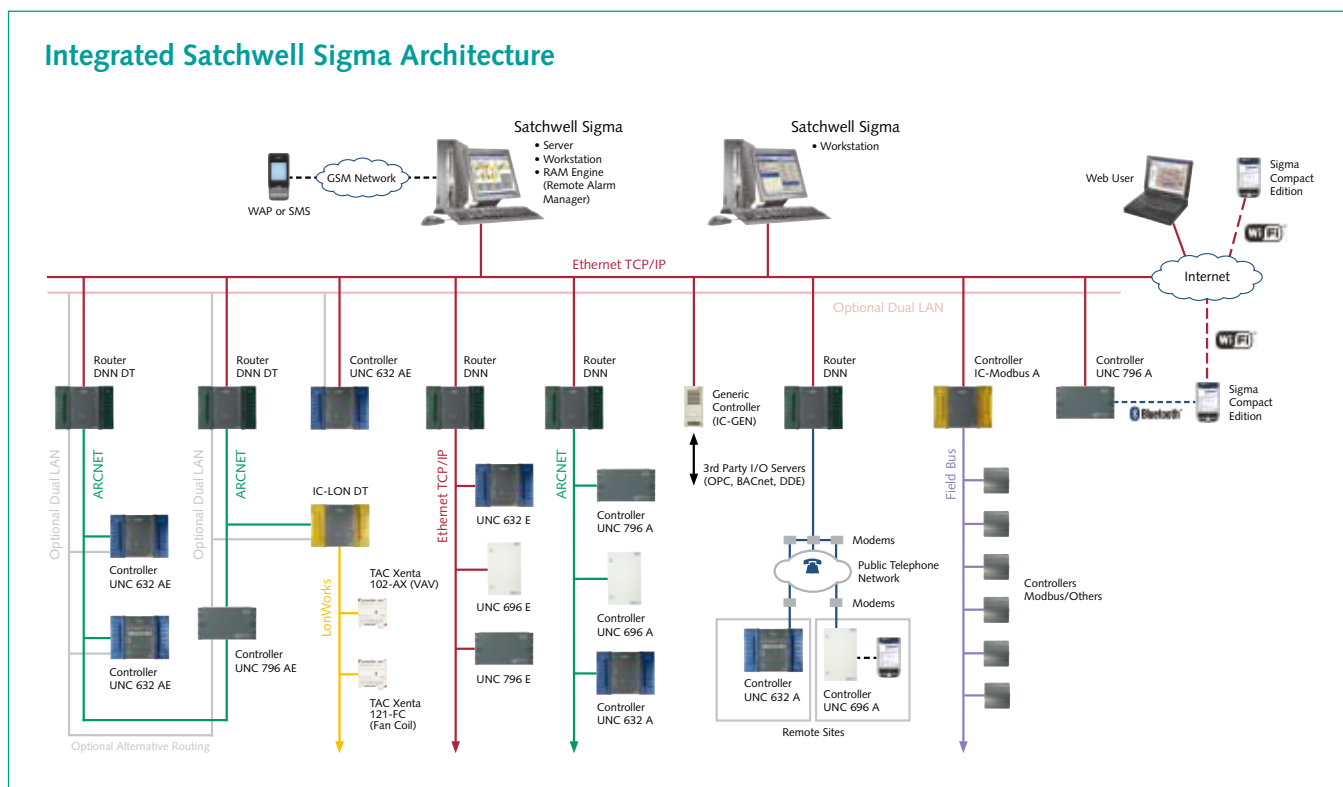
	Description	Type
<b>MN-VW100-UK</b>	MicroNet View	100 tag, English version
<b>MN-VW500-UK</b>	"	500 tag, English version
<b>MN-VW2K-UK</b>	"	2,000 tag, English version
<b>MN-VWIO-MOD</b>	I/O-servers	MicroNet MODBUS I/O Server & OPC Link
<b>MN-VWIO-NCP</b>	I/O Servers (includes dongle)	NCP/ARCNET I/O-server, dongle
<b>MN-VWIO-SNP</b>	"	Satchnet I/O-server, dongle
<b>MN-VWP500-UK</b>	MicroNet View Pro	500 tag, English version Development
<b>MN-VWP2K-UK</b>	"	2,000 tag, English version Development
<b>MN-VWP10K-UK</b>	"	10,000 tag, English version Development
<b>MN-VWP60K-UK</b>	"	60,000 tag, English version Development
Data Sheet 10.201		

**HARDWARE SPECIFICATIONS**

See data sheet 10.201 for minimum hardware requirements.

# SATCHWELL SIGMA BUILDING AUTOMATION SYSTEM – OVERVIEW

Satchwell Sigma is an advanced Building and Energy Management solution incorporating state-of-the-art communications and 'open platform' integration technologies. Based on IP connectivity (Internet Protocols) and industry standards, Sigma is secure, fast and resilient.



## INTUITIVE USER INTERFACES

Sigma offers an extensive range of local and remote user interfaces, easily customisable to match each individual user's needs and authority levels. Web browser access is included in the standard Sigma system software, while Sigma's implementation of MS Windows Compact Edition on pocket PCs (PDAs) provides local user access to entire networks using the power of the Internet, Bluetooth and WiFi technologies.

## DELIVERING THE INTELLIGENT BUILDING

Manage all your building services – boilers, chillers, ventilation, fan coil units, lighting, metering, lifts, intrusion, fire detection etc – from a single, global and feature-rich environment. Third party systems can exchange live information in real time through Sigma's network, to provide coordinated control strategies, saving energy and reducing costs. Integrated systems also benefit from Sigma's advanced features: live graphics, alarms, logging, multiple user interfaces - including web browsers and pocket PCs - tight security, remote alarm management and full back-up capabilities.



## FEATURES

### General

- Multi-tasking intelligent system
- Easy to use, operates on a standard menu system and tool bar screen

### User

- User interface & displays configurable for different users based on their passwords
- Multi-layered index for easy plant identification & navigation
- Graphical set-up for Time and Calendar schedules
- Web server capability included in the standard edition Sigma software
- Built-In Help Manual
- Event Driven Active Graphics

### Platform

- Windows 2000 Professional or Windows XP Professional

### Scalability

- Flexible for small, medium or large sites, either hardwired or remote
- Multi-user/Multi-terminal
- Budget 150 and 400 object versions available

### Communications

- Wide area operation including Modem
- ARCNET and / or Ethernet connectivity including dual trunking options

### Control & Integration

- Distributed Direct Digital Control
- Integration Controllers to third party systems such as meters, UPSs, fire, security, lighting, controllers, etc.

## System Software

Satchwell Sigma is a high performance building management system which can be scaled from a single controller in a plant room to a complex wide-area system spanning the largest multi-site buildings. Sigma utilises open distributed intelligence and peer to peer (IP) communications, and is highly configurable with a comprehensive range of options.

Sigma comprises one or more clients connected to a server, all running under Windows® 2000 or Windows XP Professional. Sigma Standard Edition software includes Web ActiveX client software (Sigma's native graphics on the Web) and supports Web HTML clients (Sigma HTML pages on the Web). Sigma also supports a portable Compact client (based on a subset of the Standard Edition), which runs on a Windows CE Handheld PC.

Sigma is multi-tasking and allows multiple clients to be used on the same system. Clients may be configured as multi-purpose for complete system operation, or they may be dedicated to particular functions, facilities and locations. This allows on-line multi-user applications to be speedily carried out whilst providing total system flexibility. The standard software is supplied complete with web, graphics, dynamic and historical logging, comprehensive alarm handling and extensive built-in Help.

By using an Integration Controller (IC), it is possible to interface Sigma to a wide variety of third party equipment and packages such as maintenance packages and reporting applications

Order code	Licence Description	Data Sheets
<b>S-FULL</b>	Standard Edition	DS 13.101
<b>S-CLI</b>	Additional Client – Standard Edition*	"
<b>S-400</b>	Light Edition – 400 objects	"
<b>S-150</b>	Personal Edition – 150 objects	"
<b>S-UPG</b>	Upgrade to Standard Edition	"
<b>S-WINCE</b>	Compact Edition for Windows CE Devices	DS 13.111
<b>S-TOOLKIT</b>	Advanced Toolkit option	DS 13.104
<b>S-ODBC</b>	ODBC option	DS 13.102
<b>S-FLEXIMA</b>	Flexima option	DS 13.103
<b>S-ASM</b>	Advanced Security Model option	DS 13.106
<b>S-RAM</b>	Remote Alarm Manager option	DS 11.001

\*Up to 10 clients per server

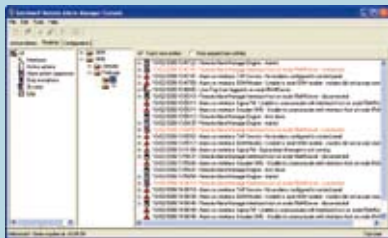
## HARDWARE SPECIFICATIONS

See data sheet for minimum hardware requirements.



**FEATURES**

- Highly portable Human-Machine Interface (HMI)
- Familiar Explorer-style navigation
- Display and overrides
- Short Form Editing
- Contingency logging display
- Object Alarm displays
- Dynamic object display (Actipane) – via ethernet only
- Access to all controllers on the network
- Ethernet access via LAN or wireless
- Bluetooth wireless option
- Password protected



**FEATURES**

- Alarm information collected automatically from Sigma
- Output drivers to fax, remote printer, Web pages, SMS messaging or E-mail
- Core software includes Web and WAP interfaces
- Self-monitoring of system hardware and software
- Console for system configuration and full alarm history

**S-WINCE Compact Edition (CE) Licence**

Sigma Compact Edition (CE) software, which runs on a Windows® CE Pocket PC, provides a subset of the full client/server Sigma software, creating a highly portable solution.

Sigma CE includes the ability to display object conditions, override object values, edit object parameters using the Short Form Editor, apply time extensions, and view and setup contingency log information.

Sigma CE can communicate with any controller in the Sigma network using a serial connection to a Universal Network Controller (UNC), Distributed Network Node (DNN) or Integration Controller. Alternatively, Sigma CE can communicate with the Sigma network via Ethernet LAN or Ethernet wireless, or via a Bluetooth wireless serial connection (with an RS-232 converter at the controller).

Any controller on the network can be monitored and controlled, not just the unit that Sigma CE is connected to.

	Licence Description	Data Sheet
<b>S-WINCE</b>	Compact Edition (CE) Software Licence	DS 13.111

**HARDWARE SPECIFICATIONS**

See data sheet for minimum hardware requirements.



**REMOTE ALARM MANAGER**

**Remote Alarm Manager**

Remote Alarm Manager is a powerful software package for routing alarm information to management and service personnel. It integrates seamlessly to Sigma and includes comprehensive alarm tracking and history.

Alarms can be acknowledged remotely from a GSM or WAP-enabled mobile phone or from a Web browser. Message content can be customised and alarms can be routed according to alarm priority, type of alarm and time of day.

Remote Alarm Manager is an essential system for organisation that use mobile maintenance staff, and where different maintenance personnel are on duty at different times of the day or week. Remote Alarm Manager can ensure that the correct personnel are made immediately aware of maintenance tasks, and that alarm conditions are resolved as quickly as possible.

	Description	Type
<b>S-RAM</b>	Remote Alarm Manager, core	System software, includes 1 output driver
<b>S-RAM-OUT</b>	Output drivers	Additional output interface (see data sheet)
Data Sheet 11.001		

**HARDWARE SPECIFICATIONS**

See data sheet for minimum hardware requirements.



## FEATURES

- Intelligent 32-bit microprocessor technology
- Up to 32 configurable input/output objects & 55 software objects
- Stand-alone capability
- Local and wide area networking capability
- Optional ARCNET® or Ethernet communications
- Flexible and configurable application software
- IP 40 Protection Class
- Optional keyboard and display
- Permanent local storage of configuration (object) and accumulated data
- Integral IP (Internet Protocol) addressing
- Dual Trunk capability (redundant networking)
- Dual image Hot-Swap Flash EPROM for fast and easy firmware upgrades
- Contingency Logs held in RAM, viewable via Sigma Client, WinCE and/or Web.
- 115Vac/230Vac selectable
- ARCNET and Sigma LAN fully opto-isolated
- On board modem port

## S-632 Universal Network Controller

The Satchwell Sigma Universal Network Controller (UNC632) is fully intelligent and incorporates its own 32-bit microprocessor providing Direct Digital Control of plant. It is specifically designed for sites and applications with low object counts. After initial programming from a Satchwell Sigma server, the S-632 scans and monitors dedicated functions and will automatically decide on any control action necessary. It can operate independently of other system components and communicates with any selected Sigma Client only when necessary to provide data such as alarms or logging information, or on demand by the operator.

Each controller can monitor and control up to 32 individual items of plant. The S-632 can operate in a stand-alone mode, or it can be networked as part of a Sigma building management system. Networking can be either to a local area network or, as a single controller, directly into the wide area network of Sigma. For systems which need additional resilience, the Dual Trunking options provide redundancy and allow for cabling and other communications channel failures.

	Description
<b>S-632-A</b>	UNC632 Universal Controller, ARCNET
<b>S-632-E</b>	UNC632 Universal Controller, Ethernet
<b>S-632-AE</b>	UNC632 Universal Controller , ARCNET/Ethernet & Sigma LAN
Data Sheet 13.312	

## ACCESSORIES

- S-UNC-4DO** Digital Output Module
- S-632-KB** Sigma UNC Keyboard option
- S-TK** Trunking kit for S-x32, S-DNN3, S-IC3

## INSTALLATION DETAILS

- Power supply:** 230Vac ±10%. Switch selectable to 115Vac ±10%
- Supply frequency:** 50/60Hz ±10%
- Power Consumption:** 15VA typical, 24VA maximum (Triac outputs require a separate 24Vac supply).
- Protection class:** IP 40 by use of the trunking kit.
- Mounting:** Wall or panel mounting
- Power Failure Reserve:** Rechargeable battery gives typically 90 day back up of object data stored in RAM, and of the real time clock

## INPUTS AND OUTPUTS

I/O Point type	Description	Quantity
Analogue Inputs	Jumper link configurable for resistance (0 to 10kΩ), current (0 to 20mA) or voltage (0 to 10V). Can also be jumper link configured as digital inputs	8
Digital Inputs	Voltage free SPST contacts (open/closed). Can be used for pulse totalisation (maximum pulse frequency 10Hz).	10
Analogue Outputs	0 to 10Vdc signals (Maximum 1mA per channel). Can be used as digital outputs by using the Digital Output Module	6
Triac Outputs	24Vac. Maximum switching current 0.6A, minimum 20mA at 24Vac. External plant should be switched via externally mounted contactors.	8



**FEATURES**

- Intelligent 32-bit microprocessor technology
- Up to 96 configurable input/output points and up to 250 points including software points
- Integral IP (Internet Protocol) addressing
- Dual image Hot-Swap Flash EPROM for fast and easy firmware upgrades
- IP 66 protection class
- Stand-alone capability
- Local and wide area networking capability
- Optional ARCNET® or Ethernet communications
- Flexible and configurable application software
- Permanent local storage of configuration (object) and accumulated data
- Dual Trunk capability (redundant networking)
- Dual image Hot-Swap Flash EPROM for fast and easy firmware upgrades
- Contingency Logs held in RAM, viewable via Sigma Client, WinCE and/or Web.
- Two communication ports as standard
- ARCNET and Sigma LAN fully opto-isolated
- On board modem port

**S-696 Universal Network Controller**

The Satchwell Sigma Universal Network Controller (UNC696) is fully intelligent, and incorporates its own 32-bit microprocessor providing Direct Digital Control of plant. The S-696 is in a wall mounting IP 66 enclosure.

The S-696 scans and monitors dedicated functions and will automatically decide on any control action necessary. It can operate independently of other system components, and communicates with any selected Sigma Client only when necessary to provide data such as alarms or logging information, or on demand by the operator. Each controller can monitor and control up to 96 individual items of plant and/or sensors. Plant monitoring and control requirements are met by the appropriate selection of input and output cards. Further flexibility is achieved by enabling analogue objects to be used in a digital mode (on/off).

The S-696 CPU card (S-x96CPU-AE) contains two communications media (ARCNET and Ethernet), either of which can be used with the on-board Sigma LAN to provide optional dual-LAN operation.

	Description	Communications
<b>S-696</b>	UNC696 Universal Network Controller	
<b>S-x96CPU-AE</b>	UNC696 CPU Card Opto-isolated	ARCNET/ Ethernet and Sigma LAN
Data Sheet: 13.324		

**ACCESSORIES**

- S-UNC-AI** Analogue Input Card
- S-UNC-DI** Digital Input Card
- S-UNC-AO** Analogue Output Card
- S-UNC-DO** Digital Output Card
- S-UNC-CMD** Command Interface Module
- S-UNC-CBL** Ribbon Cable
- S-UNC-BKT** Bracket
- S-UNC-BAT** Battery Pack (typical 12 hour power failure back-up)

**Power Consumption:** 25VA maximum

**Protection class:** IP 66

**Mounting:** Wall

**Power Failure Reserve**

Full Operation: Nickel-Cadmium rechargeable battery giving typically 1.4 hour power failure back-up. An optional battery (S-UNC-BAT) provides typical 12 hour power failure back-up. Full monitoring control and communication maintained during battery operation. Memory/Clock: Typical 90 day memory and Real Time Clock retention at the end of normal battery reserve using Ni-MH battery.

**INSTALLATION DETAILS**

**Power supply:** 230Vac ±10%.

**Supply frequency:** 50/60Hz ±10%

I/O Point type	Description
Analogue Inputs*	0-10KΩ, 0-10V, 0-20mA – Jumper selected.
Digital/Pulse Inputs*	Volt-free Make/Break contacts; metering inputs.
Analogue Outputs*	0-10Vdc, plus up to two 0 to 20mA.
Digital Outputs*	SPST Voltage Free Relay contacts located internally or on a separate module (S-UNC-DO).
Relay Outputs	Eight SPCO Voltage Free Relay contacts per module (S-UNC-CMD).

*For use with x96 series controllers (Sigma & BAS)*

**\*The S-696 can accept any number or mix of 16 channel Analogue Input, Analogue Output, Digital Input & Digital Output cards to a maximum of 6 cards per controller (6 x 16 = 96 total I/O).**



## FEATURES

- Intelligent 32-bit microprocessor technology
- Up to 96 configurable input/output points and up to 250 points including software points
- Two communication ports as standard
- Extra communications board available to give two further communications ports
- Flexible and configurable application software
- Stand-alone capability
- Local and wide area networking capability
- Optional ARCNET® or Ethernet communications
- Permanent local storage of configuration (object) and accumulated data
- Dual Trunk capability (redundant networking)
- Dual image Hot-Swap Flash EEPROM for fast and easy firmware upgrades
- Contingency Logs held in RAM, viewable via Sigma Client, WinCE and/or Web.
- ARCNET and Sigma LAN fully opto-isolated
- On board modem port
- IP20 protection class

## S-796 Universal Network Controller

The Satchwell Sigma Universal Network Controller (UNC796) is fully intelligent and incorporates its own 32-bit microprocessor providing Direct Digital Control of plant. The S-796 is a Rack/Panel mount unit (19 inch).

The S-796 scans and monitors dedicated functions and will automatically decide on any control action necessary. It can operate independently of other system components, and communicates with any selected Sigma Client only when necessary to provide data such as alarms or logging information, or on demand by the operator. Each controller can monitor and control up to 96 individual items of plant and/or sensors. Plant monitoring and control requirements are met by the appropriate selection of input and output cards. Further flexibility is achieved by enabling analogue objects to be used in a digital mode (on/off).

The S-796 CPU card (S-x96CPU-AE) contains two communications media (ARCNET and Ethernet), either of which can be used with the on-board Sigma Controller LAN to provide optional dual-LAN operation.

	Description	Communications
<b>S-796</b>	UNC796 Universal Network Controller	
<b>S-x96CPU-AE</b>	UNC796 CPU Card Opto-isolated	ARCNET/ Ethernet and Sigma LAN
Data Sheet: 13.325		

## ACCESSORIES

- S-UNC-AI** Analogue Input Card
- S-UNC-DI** Digital Input Card
- S-UNC-AO** Analogue Output Card
- S-UNC-DO** Digital Output Card
- S-UNC-CMD** 8-Channel DO Module
- S-UNC-CBL** Ribbon Cable
- S-UNC-BKT** Bracket
- S-UNC-BAT** Battery Pack (typical 12 hour power failure back-up)

**Protection class:** IP 20

**Mounting:** Panel or rack mounting

### Power Failure Reserve

Full Operation: Nickel-Cadmium rechargeable battery giving typically 1.4 hour power failure back-up. An optional battery (S-UNC-BAT) provides typical 12 hour power failure back-up. Full monitoring control and communication maintained during battery operation.

Memory/Clock: Typical 90 day memory and Real Time Clock retention at the end of normal battery reserve using Ni-MH battery.

## INSTALLATION DETAILS

**Power supply:** 230Vac ±10%.

**Supply frequency:** 50/60Hz ±10%

**Power Consumption:** 25VA maximum

I/O Point type	Description
Analogue Inputs*	0-10KΩ, 0-10V, 0-20mA – Jumper selected.
Digital/Pulse Inputs*	Volt-free Make/Break contacts; metering inputs.
Analogue Outputs*	0-10Vdc, plus up to two 0 to 20mA.
Digital Outputs*	SPST Voltage Free Relay contacts located internally or on a separate module (S-UNC-DO).
Relay Outputs	Eight SPST Voltage Free Relay contacts per module (S-UNC-CMD).

*For use with x96 series controllers (Sigma & BAS)*

**\*The S-796 can accept any number or mix of 16 channel Analogue Input, Analogue Output, Digital Input & Digital Output cards to a maximum of 6 cards per controller (6 x 16 = 96 total I/O).**



**FEATURES**

- 16 channels per board
- Up to 6 boards per Outstation
- Comprehensive range of inputs
- Utility Meter Monitoring
- Analogue inputs jumper selectable to accept 0 to 10kΩ, 0 to 10Vdc or 0 to 20mA signals
- Maximum Demand Meter Monitoring
- Load Shedding Routines
- Analogue Inputs may be configured to provide Digital Inputs



**FEATURES**

- 16 channels per card
- Up to 6 cards per controller
- Analogue Outputs may be configured to provide Digital Outputs
- Jumper configurable 0 to 10Vdc output or 0 to 20mA output on 2 channels
- Digital Output Interface Modules may be housed in the controller or externally mounted
- Digital Output Interface Modules provide local HAND/OFF/AUTO overrides
- Relay rating 3A resistive, 1A inductive

**S-UNC-AI – Analogue Input Card**

**S-UNC-DI – Digital Input Card**

**Analogue Input Card**

Allows the monitoring of up to 16 Analogue Inputs (per card), which allows it to monitor most transducers and sensors used in the building services industry: 0 to 10V, 0 to 20mA and 0 to 10kΩ selectable via jumper selection.

**Digital Input Card**

This card allows the monitoring of up to 16 Digital Inputs (per card). The card will monitor normally open or normally closed voltage free contacts.

The digital input card can also be used for up to 16 totalising pulsed inputs (frequency 10Hz) received from utility meters, thus providing an efficient method of monitoring energy consumption of buildings and installed plant.

Software programmes also permit up to 8 maximum demand meters to be monitored and automatically provide load shedding routines to ensure that maximum demand is not exceeded.

	Description	Data Sheet
S-UNC-AI*	Analogue Input Card	DS 13.343
S-UNC-DI*	Digital Input Card	

**S-UNC-AO – Analogue Output Card**

**S-UNC-DO – Digital Output Card,**

**S-UNC-CMD – Digital Output Interface Module**

**Analogue Output Card**

Analogue Outputs provide modulated control of valves and dampers, Variable Speed Drives (VSDs) and inverters.. The Analogue Output Card allows up to 16 channels, providing a 0 to 10Vdc or 0-20mA output (two per card).

**Digital Output Card**

A Digital Output Card enables individual items of plant such as pumps, fans, boilers etc. to be switched on or off in response to the programmed control requirements. Up to 16 outputs are available from each card to switch the plant via the Command Interface Module.

**Digital Output Interface Module**

This module provides a relay interface between the Digital Output Card and the switched plant. Up to two modules (8 channels per module) can be fitted within each S-696 controller. Additional modules may be mounted in adjacent interface panels or control panels. Each relay is provided with Hand/Off/Auto switches.

	Description	Data Sheet
S-UNC-AO*	Analogue Output Card (16 channel)	DS 13.353
S-UNC-DO*	Digital Output Card (16 channel)	
S-UNC-CMD	Digital Output Interface Module (8 channel)	

**ACCESSORIES:**

**S-UNC-CBL** Ribbon cable to connect a Digital Output Card to internally mounted Digital Output Interface Module(s)

**S-UNC-BKT** External mounting kit for S-UNC-CMD.

\*For use with x96 series controllers (Sigma & BAS)



## FEATURES

- Generic router for Sigma
- Supports up to seven communications ports
- Intelligent 32-bit microprocessor technology
- Built-in LAN port
- Ethernet (10base-T/100base-TX) and ARCNET communications
- Integral IP (Internet Protocol) addressing
- Supports UDP Transport layer technologies
- Utilises Internet-based Routing Information Protocol (RIP) for automatic negotiation of optimum data routes.
- Allows dual LAN architectures
- Dual image Hot-Swap Flash EPROM for fast and easy firmware upgrades
- Wall or panel mounting
- One modem port on S-DNN3, three on S-DNN3-DT
- Stand-alone capability
- Local and wide area networking capability
- Optional ARCNET® or Ethernet communications
- Dual Trunk capability (redundant networking)
- ARCNET and Sigma LAN fully opto-isolated

## S-DNN3 Distributed Network Node

The Distributed Network Node (DNN3) is a communications router for use in the Satchwell Sigma building management system. With up to seven communications ports, it can connect a variety of different network types (both local and wide area) as well as the Sigma user and controller equipment.

Local area connectivity covers Ethernet (10/100baseT), ARCNET® (156kbps to 5Mbps) and Sigma LAN (19.2kbps RS 485). Wide area connectivity includes PSTN (modem) and routers.

For systems which need additional resilience, the Dual Trunking option provides redundancy and allows for cabling and other communications channel failures. Dual Trunking is available in various combinations of cabling/protocol technologies.

After initial programming of its IP address and its node number, the DNN3 automatically builds optimum routing rules during normal network operation. Where connections such as AutoDial are used, Static Port Information is downloaded from a Sigma terminal.

	Description	Communication Ports
<b>S-DNN3</b>	Standard DNN3	1 x ARCNET, 1 x Ethernet, 1 x Modem
<b>S-DNN3-DT</b>	Dual Trunking DNN3	2 x ARCNET, 3 x Ethernet, 1 x Sigma LAN, 3 x Modem
Data Sheet 13.424		

## ACCESSORIES

- S-DNN-BAT** Backup NiMH Battery
- S-TK** Trunking kit

## INSTALLATION DETAILS

**Power supply:** 230Vac ±10%. Switch selectable to 115Vac ±10%

**Supply frequency:** 50/60Hz ±10%

**Power Consumption:** 15VA typical, 24VA maximum (Triac outputs require a separate 24Vac supply).

**Protection class:** IP 40 by use of the trunking kit.

**Mounting:** Wall or panel mounting

**Power Failure Reserve:** Rechargeable battery giving typical 90 day power failure back up of data stored in RAM and of the real time clock.

Optional battery pack (S-DNN-BAT) is available for Uninterrupted Power supply (typically 2.5 hours back-up with module operation).



## FEATURES

- Intelligent 32-bit microprocessor technology
- Stand-alone capability
- Local and wide area networking capability
- Optional ARCNET® or Ethernet communications
- Flexible and configurable application software
- IP 40 Protection Class
- Permanent local storage of configuration (object) and accumulated data
- Integral IP (Internet Protocol) addressing
- Dual Trunk capability (redundant networking)
- Dual image Hot-Swap Flash EPROM for fast and easy firmware upgrades
- Two communication ports as standard
- 115Vac/230Vac selectable
- ARCNET and Sigma LAN fully opto-isolated
- On board modem port

## S-IC3 Integration Controllers

Please contact your local distributor for an up-to-date list of 3rd Party Integration Solutions to other systems (i.e. Fire and Security, Access Control, Chillers etc), including the following, available at the date of issue of this catalogue:

Order code	Description	Data Sheet
S-IC3-LON-A	SIGMA IC3 – LON ARCNET	13.685
S-IC3-LON-E	SIGMA IC3 – LON ETHERNET	"
S-IC3-LON-DT	SIGMA IC3 – LON Dual Trunking	"
S-IC3-MODBUS-A	SIGMA IC3 – MODBUS ARCNET	13.684
S-IC3-MODBUS-E	SIGMA IC3 – MODBUS ETHERNET	"
S-IC3-MODBUS-DT	SIGMA IC3 – MODBUS Dual Trunking	"
S-IC3-SNP-A	SIGMA IC3 – SNP ARCNET	13.602
S-IC3-SNP-E	SIGMA IC3 – SNP ETHERNET	"
S-IC3-SNP-DT	SIGMA IC3 – SNP Dual Trunking	"
S-IC3-UNIFACT-A	SIGMA IC3 – UNIFACT ARCNET	13.305
S-IC3-UNIFACT-E	SIGMA IC3 – UNIFACT ETHERNET	"
S-IC3-UNIFACT-DT	SIGMA IC3 – UNIFACT Dual Trunking	"
S-IC3-ASIC DT	SIGMA IC3 – ASIC Dual Trunking	13.600
S-IC3-CARRIER-DT	SIGMA IC3 – Carrier Dual Trunking	13.627
S-IC3-MCQUAY-DT	SIGMA IC3 – MCQUAY Dual Trunking	13.629
S-IC3-MN2000-DT	SIGMA IC3 – MN2000 Dual Trunking	13.601
S-IC3-YORK-DT	SIGMA IC3 – YORK Dual Trunking	13.628
S-IC3-FIDELIO-DT	SIGMA IC3 – FIDELIO Dual Trunking	13.686

### Guide to A, E, and AE specifications

S-xxx-A	Sigma controller with ARCNET communications
S-xxx-E	Sigma controller with Ethernet communications
S-xxx-DT	Sigma Controller with ARCNET/Ethernet & Sigma LAN communications



## FEATURES

- DDE and OPC DA2 variants
- Access to hundreds of 3rd party systems via standard I/O servers
- Display window, showing DDE or OPC object activity
- Built-in 3rd party points mapping tool
- 3rd party objects inherit all Sigma object functionality
- Runs on dedicated Windows 2000/XP PC
- Up to 1,000 Sigma objects in a single IC-GEN controller
- Ethernet connectivity
- Support for multiple DDE or OPC drivers
- Bespoke or customised integration solutions

# INTEGRATION

## IC-GEN Integration Software

IC-GEN is a software application that runs on a dedicated PC platform. It operates in a similar manner to other Satchwell Sigma integration controllers, which normally operate on the DNN/IC hardware platform.

IC-GEN is available in two variants:

- S-ICGN-DDE interfaces to third party systems capable of Dynamic Data Exchange (DDE) communications
- S-ICGN-OPC interfaces to third party systems that are OLE for Process Control (OPC) compliant (OPC DA2).

Each IC-GEN connects to the Sigma network via Ethernet and appears to Sigma as a controller, providing a means to integrate data from the DDE or OPC source.

Order Code	Description
S-ICGN-DDE	IC GEN Integration Controller Software DDE, including USB dongle.
S-ICGN-OPC	IC GEN Integration Controller Software OPC, including USB dongle.
Data sheet 13.151	

## HARDWARE SPECIFICATIONS

See data sheet for minimum hardware requirements.

PC-based Integration		Data Sheet
S-ICGN-DDE	IC-GEN Integration software, DDE	13.151
S-ICGN-OPC	IC-GEN Integration software, OPC	





## FEATURES

- Increased range & variety of user interfaces – web, pocket PCs, Client/Server
- More flexible, streamlined day-to-day operation
- Faster communications & additional resilience options, e.g. dual trunking
- Contingency Logging – ALL objects logged automatically (no initial setup required)
- Secure web access via a standard browser
- Mobile access to network via S-WINCE (Compact Edition) - serial, Bluetooth, or WiFi
- Sigma Web pages automatically derived from existing Sigma graphics
- ActiPane - instant feedback on rapidly changing system values
- Dual 'hot-swap' flash EEPROM – remotely download new software
- Re-use BAS 2800+ graphics, applications and programming
- Re-use BAS LAN for ARCNET network (subject to survey)
- Use existing Ethernet networks – Sigma generates exceptionally low network loading
- Sigma-ready devices (post summer 1999) require only minor updates

## BAS to Sigma Migration

Satchwell Sigma is the natural evolution of the Satchwell BMS platform. As with its various predecessors (BAS700/2000/2800/2800+), Sigma provides backward compatibility to the previous generation of hardware and software.

Upgrading a BAS system to Sigma is a proven and straightforward process. For upgrading purposes, BAS 2800+ sites are divided into 2 categories:

1. Post-summer 1999 (Sigma ready) sites. These require a firmware upgrade (new memory chips) and a communication module (ARCNET or Ethernet). See Sigma-ready Hardware Upgrade Table.
2. Pre-summer 1999 sites. These require the use of Upgrade Kits (Part S-132-UPKIT and S-X96-UPKIT).

## SIGMA-READY HARDWARE UPGRADE

The following items cover the migration of BAS hardware manufactured after summer 1999 (Sigma-ready devices): UNC532, UNC496, UNC596, NIU Type 2

Specification	Description	Convert from	To
<b>S-532-FLASH</b>	UNC532 Flash EEPROMs	UNC532 BAS	S-532 Sigma
<b>S-532-KIT</b>	UNC532 escutcheon and side panels	UNC532 BAS	S-532 Sigma
<b>S-V53-FLASH</b>	UNC496/596 Flash EEPROMs	UNC496/596 BAS	S-496/596 Sigma
<b>S-DNN-FLASH</b>	DNN Flash EEPROMs	NIU Type 2	DNN
<b>S-DNN-KIT</b>	DNN escutcheon and side panels	NIU Type 2	DNN
<b>S-ARCTP-N</b>	ARCNET Comms module (Non-opto-isolated)	BAS LAN	Each Sigma device must be fitted with an ARCNET or an Ethernet module
<b>S-ARCTP-O</b>	ARCNET Comms module (Opto-isolated)	BAS LAN	
<b>S-ETH</b>	Ethernet Comms module (10BaseT)	BAS LAN	

## BAS HARDWARE MIGRATION (PRE-SUMMER 1999 PRODUCTS)

The following items cover the migration of pre-summer 1999 BAS hardware: UNC122/122+/132, UNC126, UNC196/296, NIU Type 1

Specification	Description	Convert from	To
<b>S-632-AE</b>	UNC632 with ARCNET, Ethernet (100Mbps) & Sigma LAN	UNC126 BAS	S-632
<b>S-132-UPKIT</b>	UNC632 main board, escutcheon and side panels, with ARCNET, Ethernet (100Mbps) & Sigma LAN	UNC122/132 BAS	S-632
<b>S-x96-UPKIT</b>	Kit including a UNCx96 CPU board with ARCNET, Ethernet (100Mbps) and Sigma LAN, and a power supply card (PSU)	UNC196/296 BAS	S-696/796
<b>S-UNC-DI</b>	UNCx96 Status Input card	UNC196/296 MD card	S-696/796
<b>S-DNN3</b>	DNN with ARCNET & Ethernet (100Mbps)	NIU Type 1	S-DNN3
<b>S-DNN3-DT</b>	DNN with 2xARCNET, 3xEthernet (100Mbps) & Sigma LAN	NIU Type 1	S-DNN3

## IAC CONTROLLERS



### FEATURES

- Serial link
- Configured via VisiSat
- Configurable switched outputs
- Six configurable inputs
- 15Vdc supply output
- 0 to 10Vdc or stepped fan control
- Three off 2-stage controllers
- Optional Real Time Clock (RTC) board



### FEATURES

- 6 PID control loops
- Compensation and optimisation modules
- Configured via VisiSat
- Standard selectable applications
- Six temperature (resistive) sensor inputs
- Six 0 to 10Vdc inputs
- Eight Voltage free switched inputs

## IAC PROGRAMMABLE CONTROLLERS

### IAC 420

#### Universal Multi-Loop Intelligent Advanced Controller

The IAC 420 is designed for use in both small and large buildings. It has a stand-alone capability, or may be configured from a central computer over the serial link. The IAC 420 has pre-sets for common applications or can be fully customised.

	Terminals	Control	Range	Outputs
IAC 420 – F	Fixed	3 loop	-40 to +150°C 20 to 90% rh	3 x 0 to 10Vdc 3 x 24V pulsed
IAC 420 – P	Plug-in		250 to 9750 Ohms 0 to 10,000 Lux	24V switched 1 x 15Vdc
Data Sheet 2.801				

### INSTALLATION DETAILS

**Power supply:** 24Vac (±10%) 47/63Hz

**Power Consumption:** 6VA max (excluding any connected outputs)

**15 Volt dc Output:** 25 mA max

**Power failure reserve:** E2PROM preserves configuration data and user settings.

**Inputs:** 6 x configurable inputs

**Outputs:** 3 x 0 to 10V outputs, 6 x digital (triacs on/off) outputs

### ACCESSORIES

**841-1-201** Real Time Clock Board

### IAC 600

#### Universal Multi-Loop Intelligent Advanced Controller

The IAC 600 is a Multi-loop Configurable Controller designed primarily for use in typical multi-loop situations such as air-conditioning systems and Central Plant Heating/Cooling Systems.

The IAC 600 includes full plant sequence control and rotation based on plant hours run. It also has a number of preset applications in the software to cater for typical control schemes.

	Control	Range	Outputs
IAC 600-B IAC 600-S	6 x PID loops	-40 to +150°C 20 to 90% rh 250 to 9750 Ohms 0 to 10,000 Lux	4 x 0 to 10Vdc 8 x on/off triac 1 x 15Vdc
Data Sheet 2.951			

### INSTALLATION DETAILS

**Power supply:** 24Vac (±10%) 50/60Hz

**15 volt dc output:** 30 mA max

**Power Consumption:** 10VA

**Power failure reserve:** Non volatile RAM preserves memory up to 10 years.

**Inputs Sensors:** Six temperature (resistive). Six 0 to 10 Volt dc, max input 10 Volts dc

**Digital input:** Eight voltage free contacts, opto isolated, can be used for pulse counting, 0.5Hz max.

**Actuator Outputs:** Four 0 to 10 Volt dc. Eight digital (triac on/off) outputs

## IAC DISPLAY



### FEATURES

- Mounts on IAC base unit or optional panel mounting
- Touch sensitive graphic LCD screen
- Menu operation for interrogation and setting
- Back-lit screen for easy viewing
- Communicate with up to 31 IACs
- Battery backed clock
- Displays up to 256 parameters

## TERMINAL UNIT CONTROLLERS



### FEATURES

- Fully networkable or stand-alone controllers
- Selectable control applications (fan-coil applications)
- Low installation cost
- Simple setup using PDA hand-held computer or PC via infra-red or RS 232 link
- Designed to maximise energy savings
- Optional networking to an MicroNet system
- Supports S-Link sensors

## IAC TOUCH SCREEN DISPLAY

### Touch Screen for IAC 600 Controller

This optional Touch Screen gives access to up to 31\* IAC base units on its own sub-LAN (including the IAC 600, 400, 420 and 200). The Touch Screen can be mounted direct on the IAC 600 base unit.

The Touch Screen allows the user to interrogate the IACs. Information on sensor values and outputs can be displayed and parameters can be altered if required. The Touch Screen's battery backed clock is used by the IACs on the sub-LAN as a back-up to their own internal clocks.

*\*Dependent on the number of parameters to be displayed.*

	Description
IAC-TS	Touch Screen for IAC 600 Controller
Data Sheet 2.951	

### INSTALLATION DETAILS

**Power supply:** Powered from the IAC unit or separate 24 Volt Vac supply

**Power failure reserve:** Non volatile RAM with built-in Real Time Clock gives 3 year back up of clock and memory under

normal conditions of use.

**Power Consumption:** 2-5 VA

### ACCESSORIES

**DDC 2601** Remote Touch Screen Adaptor Kit

## NETWORKABLE TERMINAL UNIT CONTROLLERS

### UniFact® Pro Terminal Unit Controllers

The UNIFACTPRO Terminal Unit Controllers have been designed to meet virtually any fan-coil heating/cooling applications. The controllers can be used as stand-alone devices or can be networked to MicroNet systems.

The controller has three main switchable modes: comfort (day), night (off) and economy.

	Controller type	Inputs/outputs
URC-41N-10X	with on/off fan control and S-link support	2 x DI 1 x RI – temperature 1 x AI – setpoint 4 x DO – triacs 3 x DO – relays
URC-51N-10X	with 3-speed fan control and S-link support	
Where X denotes the pre-loaded application (possible to change on the field)		
0 = 4-pipe FCU, 1 = 2-pipe with changeover, 2 = DX cooling and electric heater, 3 = airside control		
URC-IR-100	Infra-red/RS 232 Receiver	
URC-SET-100	NCP Palm Commissioning Software	
Data Sheet 10.130		

### INSTALLATION DETAILS

**Control range:** 0 to 40°C

**Power supply:** 230Vac

**Power Consumption:** 230 Vac @ 12 VA maximum including outputs

**Power failure reserve:** EEPROM preserves configuration data and user settings

## SENSOR TRANSLATION TABLE

Satchwell #	TAC #	TAC Article #	Description
DR3253	STR614	004604010	Room Sensor for SVT
DRT3651	STR602	004604300	Adjustable Room Sensor 10-30°C
DRT3451	STR612	004604700	Adjustable Room Sensor 10-30°C
DRT3452	STR611	004604600	Concealed Room Sensor 10-30°C
DRT3453	STR600	004604100	Room Sensor
DU4301	STR601	004604200	Room Sensor
DUS4302	STR613	004604800	Adjustable Room Sensor +/-3°C
DUSF4351	STR609	004604400	Adjustable Room Sensor & 3 position switch
DUSF4352	STR610	004604500	Adjustable Room Sensor & 5 position switch
A701	STR600D	004604000	Drayton Room Sensor
A702	STO600D	5126000000	Drayton Outdoor Sensor
A703	STP600D	5126010000	Drayton Water Temperature Sensor
A704	STC600D	5126020000	Drayton Surface Contact Sensor
DDT0001	STD660	5126030000	Telescopic Duct Sensor
DDU0001	STD670	5126040000	Fan Coil Sensor
DOS0002	SSO600	5126050000	Solar Sensor
DOT0002	STO600	5126060000	Outside Sensor
DST0001	STC600	5126070000	Strap-on Temperature Sensor
DWT0001	STP660	5126080000	Telescopic Pipe Sensor
DWT0002	STP620	5126090000	Pipe Temperature Sensor – Fast
DRH7702	SHR100	006902340	Room Humidity Sensor
DRH7703	SHR100	006902340	Room Humidity Sensor
DDH7602	SHD100	006902320	Duct Humidity Sensor
DDH7603	SHD100	006902320	Duct Humidity Sensor
DRTH7712	SHR100-T6	006902420	Room Humidity/Temperature Sensor
DRTH7713	SHR100-T6	006902420	Room Humidity/Temperature Sensor
DDTH7612	SHD101-T6	006902410	Duct Humidity/Temperature Sensor
DDTH7613	SHD101-T6	006902410	Duct Humidity/Temperature Sensor



MicroNet  
DS 10.XXX

#### Schneider Electric

Malmö, Sweden

Phone: + 46 40 38 68 50

Helpline: +44 (0) 1628 741100

<http://www.schneider-electric.com/buildings>

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