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### 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

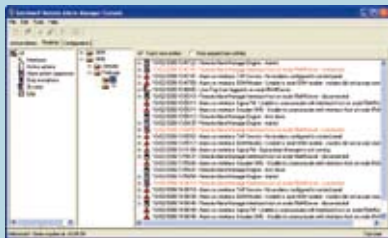
## HARDWARE SPECIFICATIONS

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
<b>URC-41N-10X</b>	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
<b>URC-51N-10X</b>	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		
<b>URC-IR-100</b>	Infra-red/RS 232 Receiver	
<b>URC-SET-100</b>	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

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