Satchwell

DS 13.310
BAS 08/99
UNC 532

BUILDING AUTOMATION SYSTEM
UNIVERSAL NETWORK CONTROLLER

The Universal Network Controller (UNC 532) is a fully intelligent stand-alone* outstation specifically designed for sites and applications with low point counts.

The UNC 532 incorporates 16-bit microprocessor technology permitting true 'peer to peer' communications directly between any of the elements on a network.

Each controller can monitor and control upto 32 individual items of plant. The inputs and outputs can be configured to match the monitoring and control requirements of plant. The UNC 532 continually surveys sensors, logs data, checks status and automatically decides on any control action necessary.

After initial programming, outstations perform independently of other system components. Each outstation incorporates a clock, calendar and memory to allow completely stand-alone operation. This stand-alone operation may be further secured and assured by the EEPROM data back up option. The optional Electrically Erasable Programmable Read Only Memory (EEPROM) is available to store the pointfile permanently in the outstation in addition to the site specific data (pointfile) stored in the battery retained memory.

The integral keyboard and display, also available as a retrofit option, offers an extensive range of local overrides and interrogation of plant conditions.

* After initial programming from a BAS terminal, the UNC 532 can be used in a stand-alone configuration. In the event of a power failure the EEPROM option will hold the configuration until power is restored.

FEATURES

- **32 configurable input/output points**
- **Cycle time: Typically <1 scan per second, also configurable for each point**
- **Fully stand-alone* outstation**
- **Compact and cost effective**
- **Cable management system**
- **16-bit microprocessor technology**
- **Two communication ports**
- **Optional EEPROM data back up**
- **Local displays and overrides**
- **Retrofit keyboard option**
- **Upto 50 software points**
- **SMT (Surface Mount Technology) based**
- **Maximum Demand/Load Shedding control capability.**

SPECIFICATIONS

Type:	UNC 532 Outstation, Opto-isolated BAS LAN with keyboard, 579-1-861 UNC 532 Outstation, Non-isolated BAS LAN with keyboard, 579-1-862 UNC 532 Outstation, Opto-isolated BAS LAN, 579-1-863 UNC 532 Outstation, Non-isolated BAS LAN, 579-1-864 **Optional Extras:** EEPROM Point file 579-1-490 Keyboard 579-1-489 Optional trunking mounting kit – Spec. no. 579-1-479 (sufficient for two knock-outs) UNC Keyboard Guide – Spec. no. 868-1-703
Power Supply:	230V ±10% Switch selectable to 115V ±10%, 50Hz (–10%) to 60Hz (+10%)
Consumption:	24 VA max. (Triac outputs require a separate 24Vac supply)
Heat Dissipation:	25W max.
Fuse:	400mA anti-surge
Power Failure Reserve:	Nickel metal hydride rechargeable battery (continuously trickle charged) giving a typical 90 day power failure back up of point file data stored in RAM and for real time clock (assuming the battery is in good condition). Configuration data is stored permanently in EEPROM.
Points:	Up to 32 hardware points and 50 software points
Ambient Temperature Limits:	Operating: 0 to 50°C Storage & Transit: –10 to 55°C
Relative Humidity Limits: (non-condensing)	Operating: 10 to 90% rh Storage & Transit: 5 to 95% rh
Microprocessor:	NEC V25+, 16-bit running at 10MHz
EPROM:	512k bytes
RAM:	512k bytes
EEPROM:	1M byte (allows permanent storage of site configuration data and telephone numbers if applicable). Optional EEPROMs available to permanently back up the complete outstation pointfile. 512k bytes – Specification no. 579-1-490
Ports:	1 – RS232/RS485 (BAS LAN) configurable - RS485 (BAS LAN) is non-isolated or opto-isolated according to specification. 1 – RS232

INPUTS

Analogue
8 off – 0 to 10k Ohms (a span of at least 1kΩ should be used for adequate resolution). Configurable for Voltage or current by use of the following resistor kits:

Range	Kit Model No.
0 to 10V	833-1-601
0 to 20mA	833-1-602

Analogue inputs can be used as digital inputs as follows:
Voltage Free SPST contacts (Open/Closed) capable of switching 15Vdc

Digital
10 off, Voltage Free SPST Contacts (open/closed)
<10k Ohms closed 1M Ohms open
Max 15V dc

Pulse Totalisation
All 10 Digital Inputs may be used for pulse totalisation.
Maximum pulse frequency 10Hz.

OUTPUTS

Analogue
6 off – 0 to 10V dc signals (1mA per channel max. at 10V output).
Analogue outputs can be used as Digital outputs by using the Digital Output Module – see DS 13.355.

Triac
8 Off – Triac Outputs, 24Vac, 0.6A max.
Minimum switching current 20mA @ 24Vac
External plant should be switched via externally mounted contactors.

APPLICATION AND ENERGY MANAGEMENT FEATURES

– Provides Distributed Direct Digital Control (3DC)
– Multi Password Access (from the central terminal)
– Energy Management Programmes
– Time Schedules
– Holiday Schedules
– Optimum start/stop of plant
– Automatic Power up of plant
– System and Plant Alarms
– Real Time System Logs
– Calculation Points
– Rotation Points
– Programmable points for user-defined control strategies
– Degree Day Calculations
– Maximum Demand Control/Load Shedding

EQUIPMENT

EEPROM:	512k bytes EEPROM - 579-1-490 - Point file EEPROM - used to permanently back-up the complete outstation pointfile (site specific data).
Retrofit Keyboard and Display:	579-1-489
Trunking Mounting Kit:	Allows easy installation to trunking system – 579-1-479
User Guide:	Keyboard Guide – 868-1-703
Terminal:	BAS 2800+ See DS 13.001
NIU:	To allow convenient connection to local area networks and remote modems (see DS 13.410).
Autodial/Autoanswer Modem:	See DS 13.401 (for autodial modem operation outside the UK contact your local Satchwell agent).
External Input/Output Modules:	When required externally mounted input/output modules are available to enhance outstation operation – see DS 13.355.

CONSTRUCTION

Case:	Metal chassis with plastic side panels.
Protection Class:	IP40 by use of the trunking kit.
Terminals:	Hard wired to pluggable screw terminal blocks. Accept 0.5 to 1.3mm^2 conductor.
Cable Entry:	Chassis knockouts in top, back, sides and bottom. Trunking kit is intended for use with the knockouts in the chassis bottom
Indication:	Two LEDs gives an indication that the outstation is operational.

KEYBOARD AND DISPLAY

Operation:	The 8 keys give access to all functions of the outstation allowing it (after initial programming) to be fully stand-alone. The keyboard is password protected for security. It is not possible to access other outstations on the Local Area Network from the keyboard.
Display:	Liquid Crystal Display (LCD), 2 lines, 40 characters per line. Default display on keyboard provides continuous indication of value or status of connected points.
Keyboard:	8 key membrane keyboard.

INSTALLATION

LOCATION

Select a position which is reasonably clean and free from damp and condensation. Wiring entry points are in the top, bottom, sides and back of the case. If the case is mounted outside of an enclosure it is recommended that the trunking installation kit is used. The wall should be capable of supporting the weight of the outstation. If it is to be housed in an enclosure, ensure that the heat generated can be dissipated without raising the ambient temperature of the space above the maximum temperature limit.

MOUNTING

1. Drill fixing holes into the wall to the dimensions given below. If the trunking kit is used then a template is supplied showing trunking entry positions.
2. Remove both plastic side panels to expose wiring terminals and fixing holes.
3. Mount the outstation securely to the wall using the fixing holes provided.
4. Connect wiring to the outstation in accordance with the appropriate system diagram.

WARNING - DO NOT SWITCH ON POWER SUPPLY UNTIL COMMISSIONING HAS BEEN CARRIED OUT BY A COMPETENT SATCHWELL ENGINEER OR AN APPROVED SATCHWELL AGENT.

WIRING PRECAUTIONS

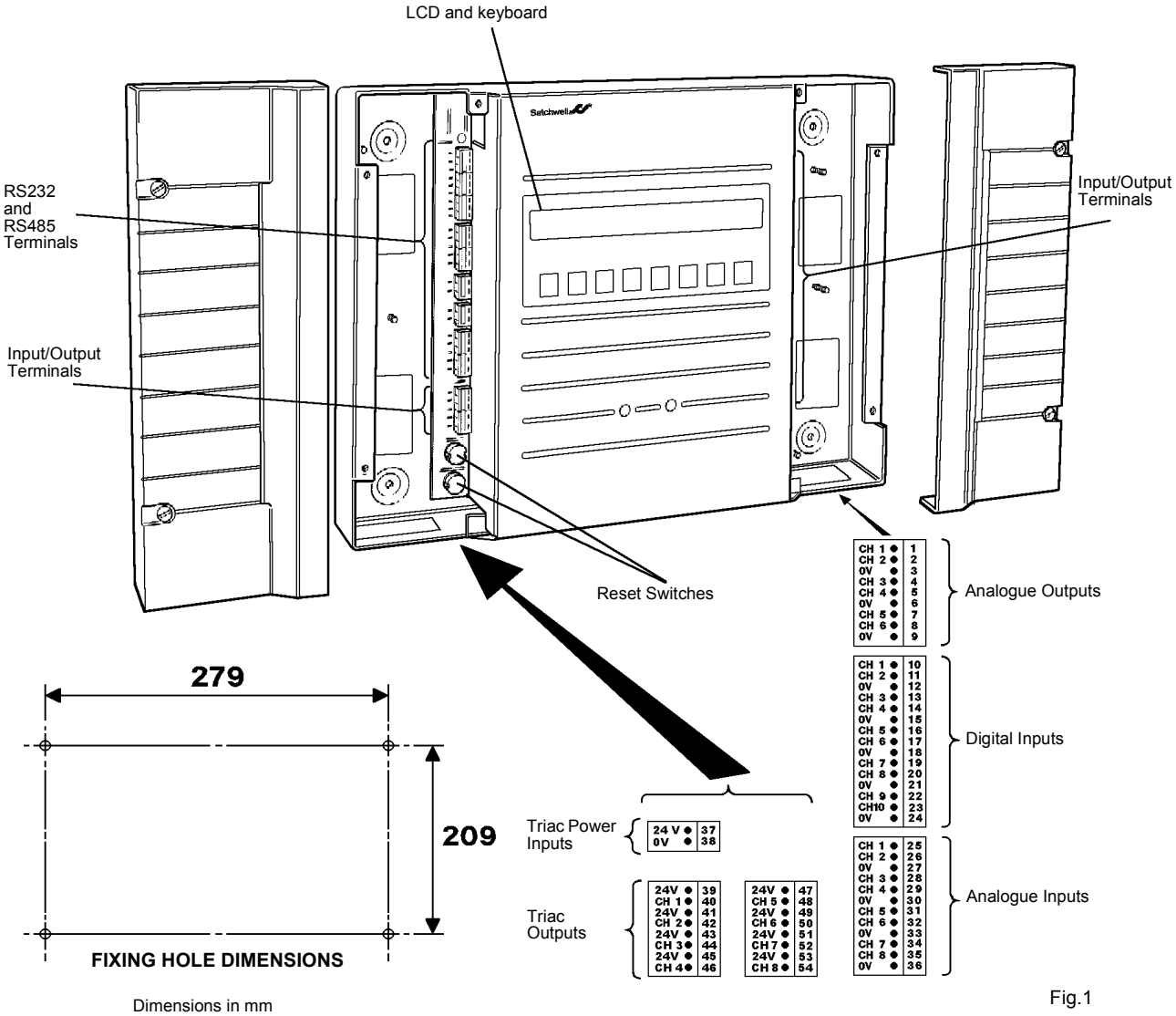
All wiring to the outstation input/output terminals must be twisted pair screened wiring (not required for Triac outputs) with the screen earthed at the outstation earth terminals only. The outstation must have a verified good earth.

It is recommended that the internal wiring in the outstation is loomed and identified to aid servicing and extensions to the system.

A full wiring specification is available from Satchwell Control Systems Ltd. or your local Satchwell agent on request.

COMMISSIONING

This unit should be commissioned as part of a BAS System by a competent Satchwell engineer or an approved Satchwell agent.



Dimensions in mm

Fig.1

TYPICAL CONNECTION DIAGRAMS

BASIC HARDWIRED SYSTEM

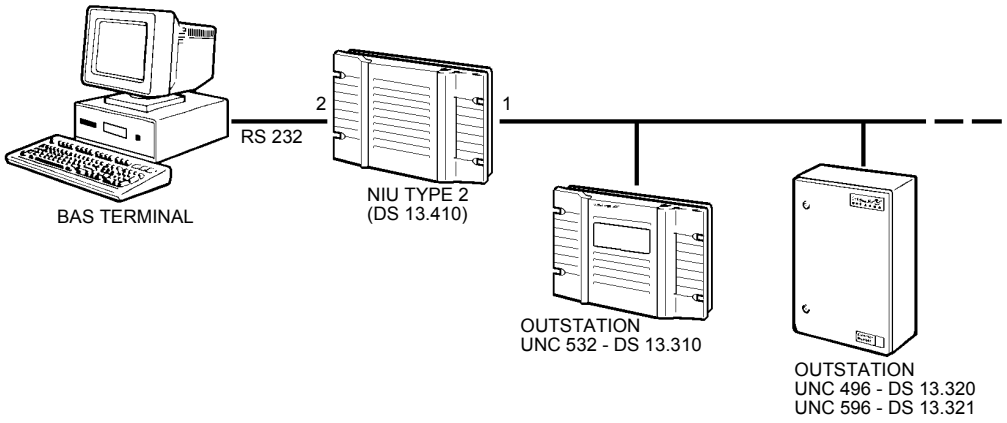


Fig.2

OUTSTATION CONNECTED TO A REMOTE MODEM

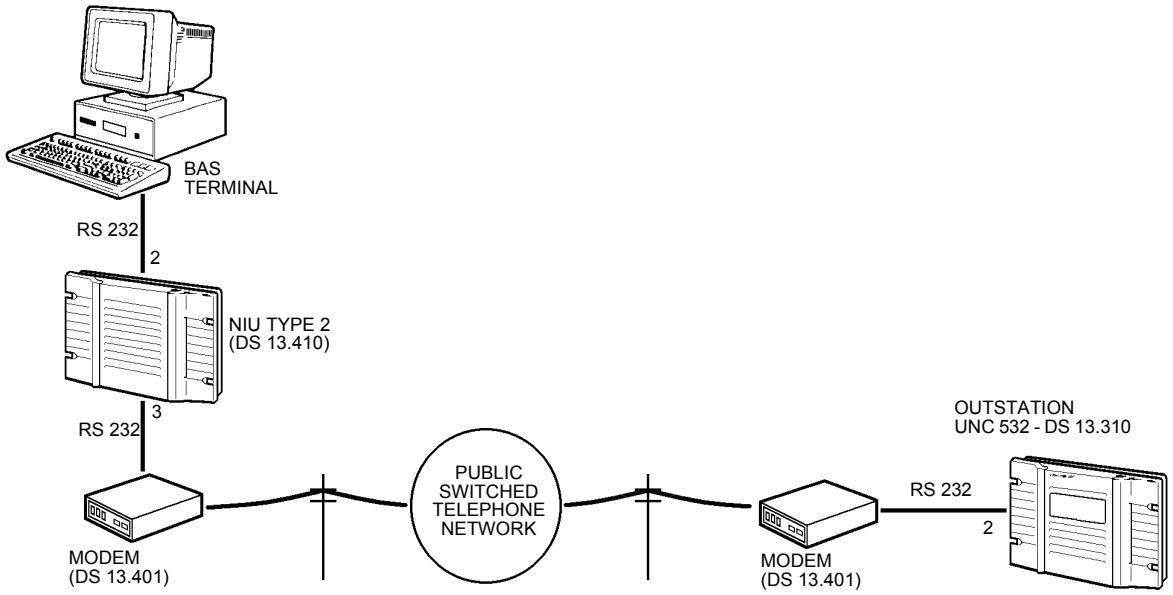
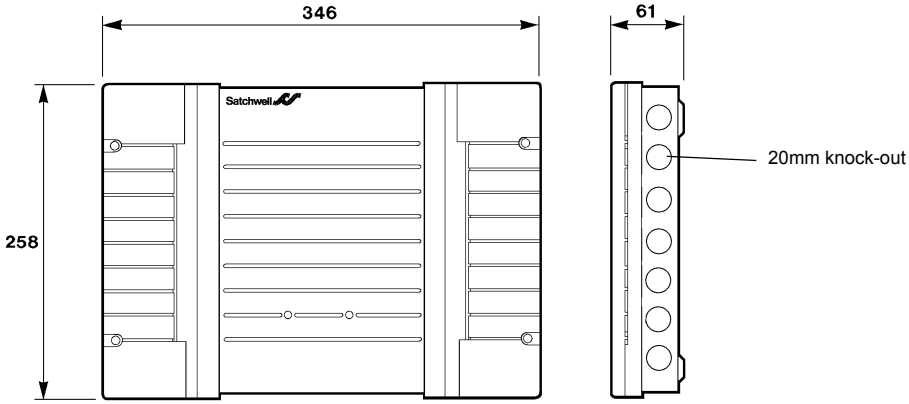
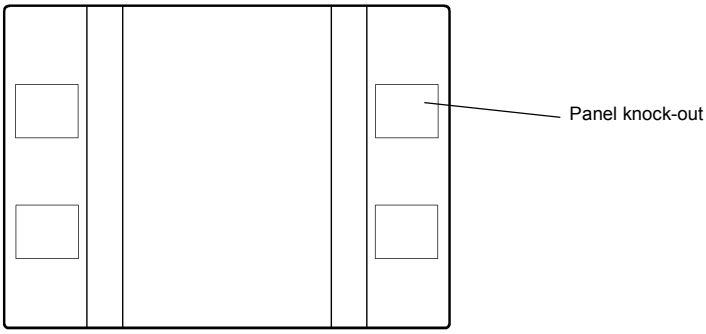


Fig.3

DIMENSION DRAWING



Dimensions in mm



WARNINGS -
THE UNC OUTSTATION IS A MAINS OPERATED DEVICE. LOCAL WIRING REGULATIONS AND USUAL SAFETY PRECAUTIONS MUST BE OBSERVED. NOTE EARTHING REQUIREMENTS - SEE Page 4.

DO NOT SWITCH ON POWER SUPPLY UNTIL COMMISSIONING HAS BEEN CARRIED OUT BY A COMPETENT SATCHWELL ENGINEER OR AN APPROVED SATCHWELL AGENT.

THIS PRODUCT CONTAINS A NICKEL METAL HYDRIDE BATTERY WHICH IS COMPLETELY SAFE WHILST IN NORMAL OPERATION. BATTERIES MUST BE DISPOSED OF IN AN AUTHORISED LANDFILL SITE.

Cautions

- **The UNC should be installed, commissioned and serviced by a competent Satchwell engineer or an approved Satchwell agent.**
- **Observe wiring precautions on Page 4.**
- **Observe maximum ambient temperature.**
- **Interference with those parts under sealed covers renders the guarantee void.**
- **It is possible that this publication may contain reference to, or information about, Satchwell products (hardware and software), programming or services that are not announced in your country. Such references or information must not be construed to mean that Satchwell intend to announce such products, programming or services in your country.**
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- **Information is given for guidance only and Satchwell do not accept responsibility for the selection or installation of its products unless information has been given by the company in writing relating to a specific application.**
- **A periodic system check of the management system is recommended. Please contact your local Satchwell service office for details.**

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