
BUILDING AUTOMATION SYSTEM UNIVERSAL NETWORK CONTROLLER

Specification no. 579-1-833

The Universal Network Controller (UNC 496) is fully intelligent and incorporates its own 16-bit microprocessor providing Direct Digital Control of plant. It scans and monitors dedicated functions and will automatically decide on any control action necessary. After initial programming from the terminal it can operate independently of other system components and communicates with any selected terminal only when necessary to down-load data such as alarms or logging information or on demand by the operator.

Each controller can monitor and control up to 96 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 the ability of analogue points to be used in a digital mode (on/off).



FEATURES

- Intelligent Microprocessor based Outstation
- 16-bit microprocessor technology
- Upto 96 configurable input/output points and up to 250 points including software points
- Local display and overrides from optional keypad
- Cable management system
- Two communication ports as standard
- Extra communications board available to give two further communications ports
- Flexible and configurable application software
- 1.5 hour or optional 15 hour (typical) full function battery support
- IP 56 Protection Class
- Door tamper switch monitored
- Mains/battery status monitored



SPECIFICATION

Type:	UNC 496 - Spec. no. 579-1-833
Power Supply:	220V (-15%) to 240V (+10%), 50Hz (-10%) to 60Hz (+10%)
Consumption:	0.16A max @ 240V 50Hz
Heat Dissipation:	25W max, 10W typical
Fuse:	An external 3A fuse should be fitted to the mains power lead.
* Power Failure Reserve:	Nickel Cadmium rechargeable (continuously trickle charged) battery giving a typical 1.5 hour power failure back-up. An optional battery provides a typical 15 hour power failure back-up (578-3-367). Full monitoring control and communication are maintained during battery operation. Typical 90 day memory retention at the end of normal battery reserve using NiMH battery. Battery backup times are typical and assume a fully charged battery that is in good condition.
Ambient Temperature Limits:	Operating: 0 to 50°C*. Storage & Transit: -10 to 55°C.
Relative Humidity Limits:	Storage: 5 to 95% rh non-condensing. Operating: 10 to 90% rh non-condensing.
Maximum Number of Points:	Up to 96 physical points and up to 250 points including software points (dependent on point configuration).
CPU Board: (Must be ordered separately)	Microprocessor: NEC V53A, 16-bit running at 20MHz (Must be ordered separately)RAM: 512k bytes EPROM: 1M bytes E ² PROM: 1M bytes (allows permanent storage of site communications configuration data and telephone numbers if applicable) fitted as standard. Ports: 1 - RS232 1 - RS485 (opto-isolation available - see page 2 for details) Spec Nos: 579-1-367 non opto-isolated 579-1-368 opto-isolated

* To maintain efficient operation of the battery, the outstation should not normally be operated for long periods outside the 10 to 40°C range.

INPUTS

Analogue

0-10K Ω (span of at least 1K Ω should be used for adequate resolution), 0-10 volts, 0-20mA. See DS 13.41/13.341 for further information.

Digital

Volt-free Make/Break contacts. See DS 13.41/13.341 for further information.

OUTPUTS

Analogue

0-10V dc Output Signals (1mA). See DS 13.51/13.351 for further information.

Digital

SPST Voltage Free Relay Contacts (rated 1A, 250V) located internally or in a separate Interface Panel. See DS 13.51/13.351 for further information.

APPLICATION AND ENERGY MANAGEMENT FEATURES

- Provides Distributed Direct Digital Control
- 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

EQUIPMENT

Optional Door:	Pre-drilled for keypad mounting - Spec No. 838-1-701
Autodial/Autoanswer Modem:	See DS 13.61/13.401
External Input/Output Modules:	When required externally mounted input/output modules are available as an alternative method of installation. These modules are then connected to the UNC Outstation by ribbon cables - see DS 13.55/13.355.
Battery:	Optional 15 hour (typical) battery pack - Specification no. 578-3-367. Battery backup times are typical and assume a fully charged battery that is in good condition.
Keypad:	Allows local communications with the outstation - see DS 13.380.
Network Interface Unit:	NIU to allow convenient connection to local area networks and remote modems - see DS 13.71/13.410.

CONSTRUCTION

Case:	Steel housing, lockable door, hinged on right.
Protection Class:	IP56
Terminals:	Hard wire to pluggable screw terminal blocks. Accept 0.5 to 1.3mm ² conductor diameter, or IDC plug and socket connection to external input/output modules, see DS 13.55/13.355.
Conduit Entries:	Sixteen, 21mm diameter knockouts through a steel glandplate in the bottom of the case.

STANDARD CONTROL BOARDS

Boards already contained in the Outstation:

- Power Supply Board

OPTIONAL FUNCTION BOARDS

Boards that can be plugged into the Outstation to give Monitoring and/or Control facilities:

- Optional Communications plus Keypad expansion board 579-1-369 - 2 RS232 Port
- Analogue Input Board - DS 13.41/13.341
- Analogue Output Board - DS 13.51/13.351
- Status and Pulse Totalisation Input Board - DS 13.41/13.341
- Command Board - DS 13.51/13.351
- Command Interface - DS 13.51/13.351

INSTALLATION

LOCATION

Select a position which is reasonably clean and free from damp and condensation. Conduit entries are in the bottom of the outstation. The door hinges on the right hand side and clearance should be left for the door to open more than 90°. 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. Fix brackets 'A' (4 off), one to each corner of the outstation, using bolts 'B' as shown in fig.1.
2. Drill fixing holes into the wall to the dimensions given above.
3. Mount the outstation on the wall securely.
4. Connect power supply cable.

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

COMMISSIONING

This unit is commissioned as part of a BAS System.

WIRING PRECAUTIONS

The power supply wiring should be screened. The screen should be earthed at the outstation only.

The outstation must have a verified good earth.

All wiring to the outstation input and output (I/O) terminals must be twisted pair screened wiring with the screen earthed at the outstation earth terminals only.

It is recommended that internal wiring in the outstation is loomed and identified to aid servicing and enhancements to the system. Separate conduit is provided in the outstation for signal wiring and mains wiring, and it is essential that this conduit is used when wiring an outstation.

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

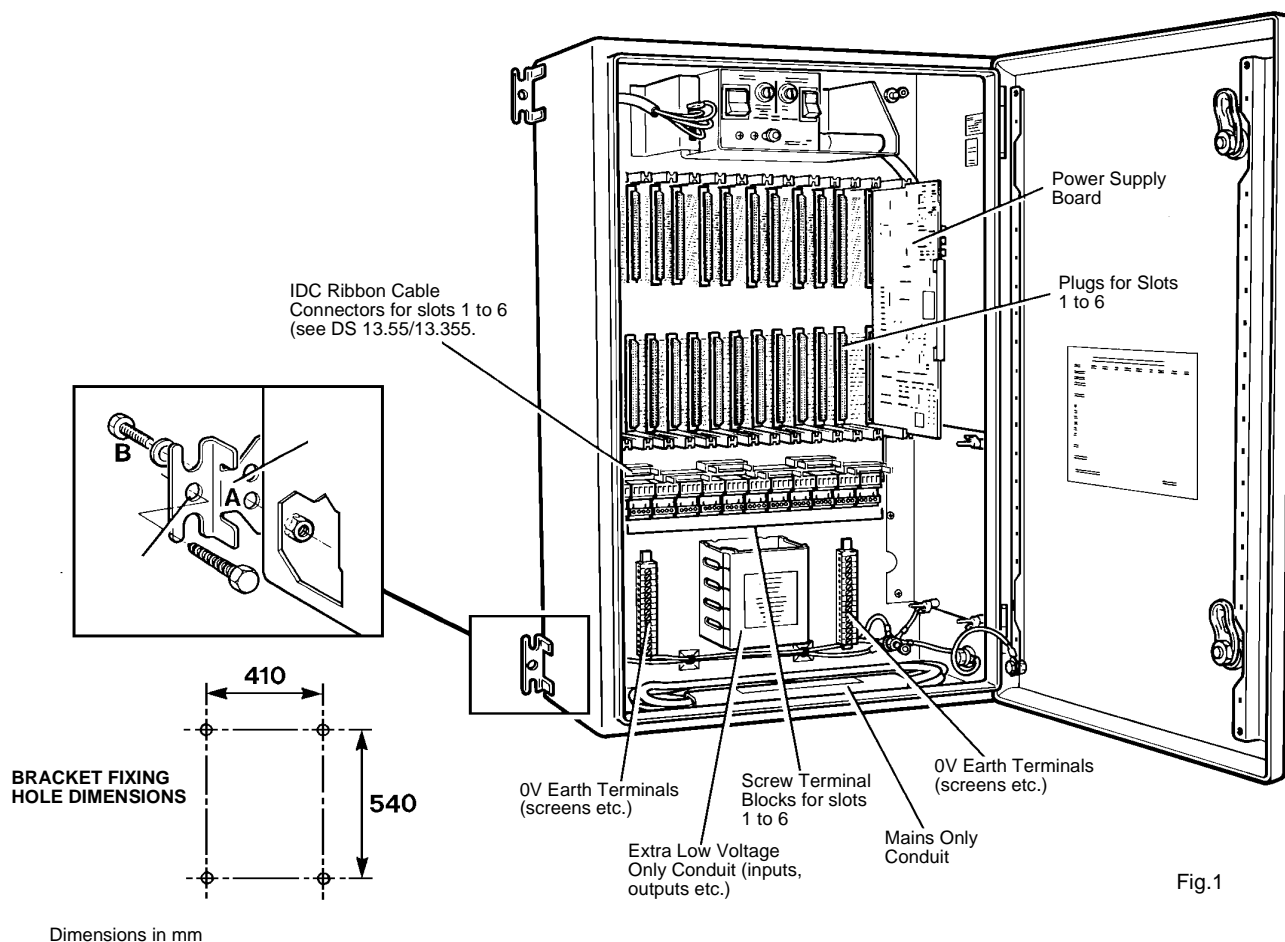
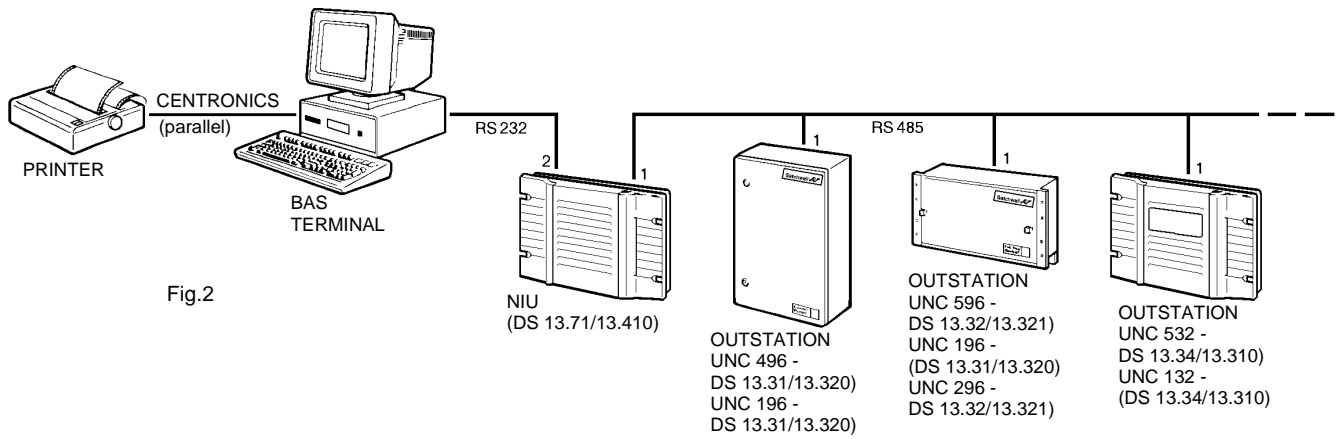


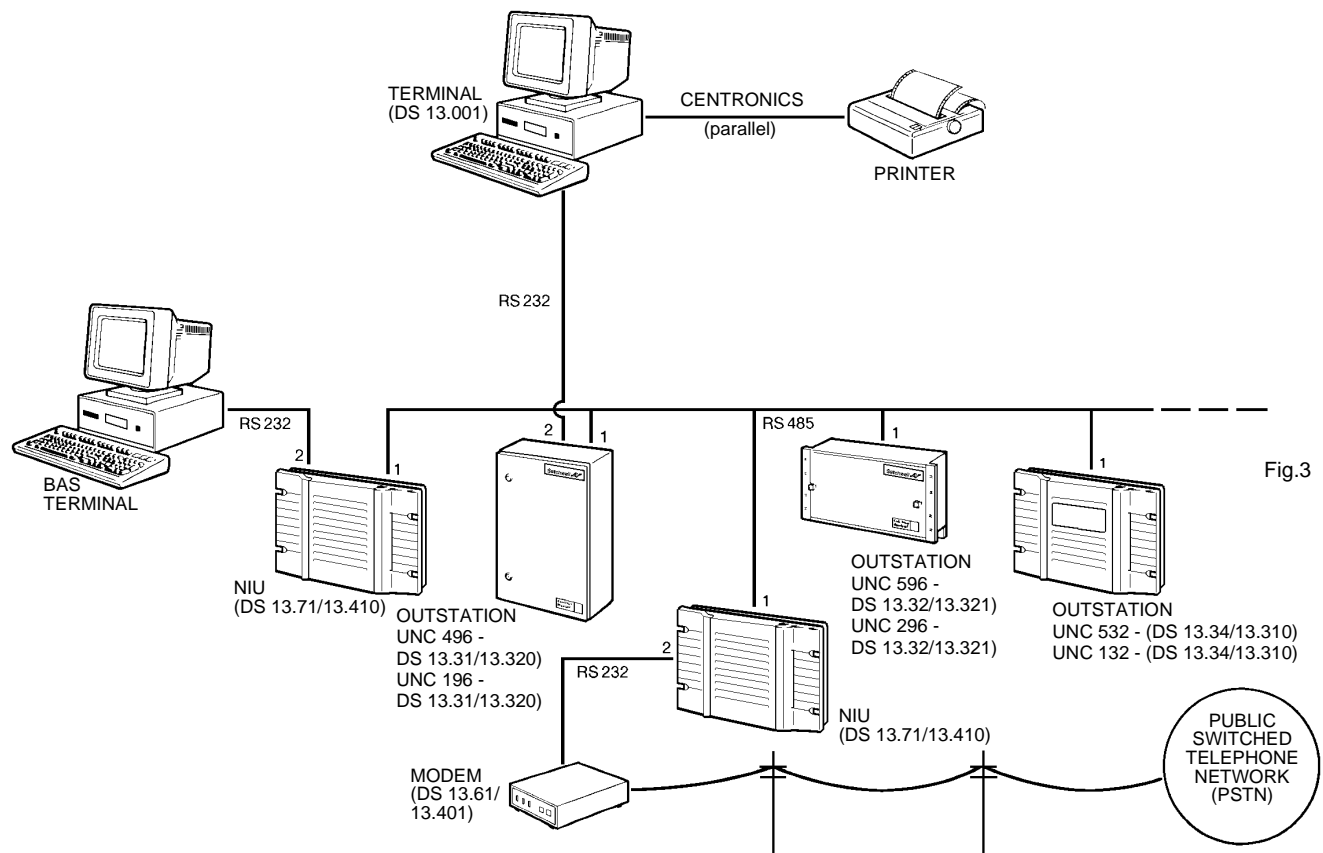
Fig.1

CONNECTION DIAGRAMS

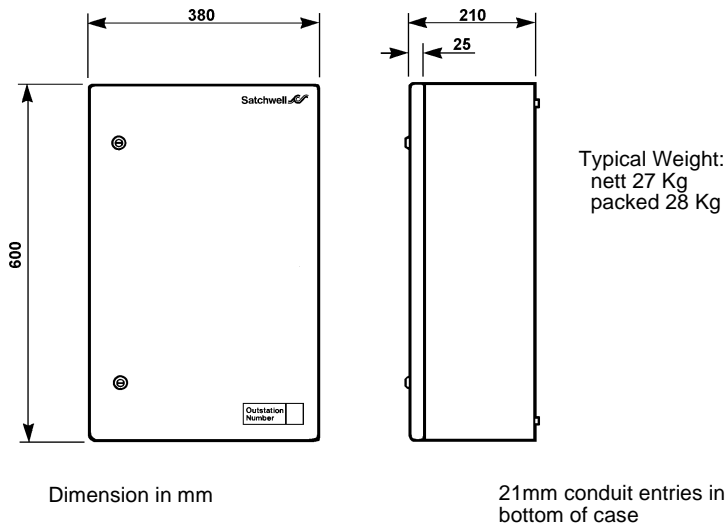
BASIC HARDWIRED SYSTEM



SMALL HARDWIRED SYSTEM WITH MODEM CONNECTION



DIMENSION DRAWINGS



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CAUTION

- This is a mains operated device. Local wiring regulations and usual safety precautions must be observed. Note earthing requirements - see page 3.
- The UNC should be installed, commissioned and serviced by competent Satchwell engineer or an approved Satchwell agent.
- Observe wiring precautions on page 3.
- This product contains Nickel Cadmium and Nickel Hydride batteries which are completely safe whilst in normal operation. Batteries must be disposed of in an authorised landfill site.
- Observe maximum ambient temperature.
- Interference with those parts under sealed covers renders the guarantee void.
- Design and performance of Satchwell equipment is subject to continual improvement and therefore liable to alteration without notice.
- 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.