



2 Clipsal Home Automation

2 HomeMinder

HomeMinder is feature rich controller that is used for a wide variety of applications including home automation. The HomeMinder consists of a base controller which is programmed through a simple, highly flexible Windows based, graphical user interface.

The HomeMinder 5200CU/2, is an intelligent controller suited to energy management, integration, complex logic, scene control and scheduling applications. Controller functions can be extended with the addition of expansion cards, such as the telephone interface, keypad or I/O expansion cards. HomeMinder Controller supports common sensors and devices including, but not limited to:

- Passive infrared motion detectors
- Reed switches for doors and windows
- Pressure mats
- Glass break detectors
- Panic push buttons
- Temperature sensors
- Watering system moisture probes
- Keypads
- Strobes
- Sirens and screamers

HomeMinder software is Windows based and uses drop down menus and a high level "English like" configuration language for define sophisticated control, monitoring and alarm sequence configuration. Standard Windows features of keyboard editing including, copy, cut and paste are supported. Controller to PC communications is via a standard COM port. The software supports a graphic background, so icons can be overlaid to represent a home, system or factor and indicate status. The graphics background can be a scanned image, or can be created from any bit mapped drawing program such as Windows Paint Brush, Harvard Graphics or Corel Draw.

Devices and sensors are represented on the background as icons. HomeMinder supports a set of standard icons for common sensors and devices, and allows the user to create customized icons.

A history log facility is provided to record alarms and events. The history log can be displayed or printed on demand. Alarms and events are stored in the Controller and can be uploaded to a PC as required.

The Controller supports battery backup and an on-board real time clock. Up to 128 scenarios (logic based macros) or programs can be defined for different control & monitoring requirements. Scenarios may include 'At Home', 'Vacation', 'Away', and 'Every Weekend'. The Clipsal HomeMinder Controller supports 500 lines of program code. Each scenario can have a maximum of 63 lines of code. The device set-ups, alarms and scenarios use a common memory allocation. Although the Clipsal HomeMinder Controller supports 500 lines of code, the number of lines is reduced when, for instance, there are many device set-ups, or alarms are defined.



5200CU/2



5207A



5217AB/2



5232TI/2

FEATURES

The Clipsal HomeMinder incorporates a number of industry compatible interfaces suitable for networking to other company systems, transducers, sensors and protocols.

C-Bus

- A direct connection to the industry standard C-Bus intelligent wiring systems. Uses unshielded twisted pair as its communication medium.

X-10

- Power Line carrier interface, uses the mains power lines as its communication medium.

RS232

- Serial interfaces for connection to a personal computer for programming and monitoring.

RS485

- Serial interface for connection to the LCD keypads.

Expansion Bus

- The Expansion Bus is located on the controller motherboard and provides the electrical and mechanical interface for the Telephone Interface and the Expansion I/O Module. 3 expansion cards may be fitted.

Inputs

- 8 general purpose inputs compatible with industry standard voltage current output devices and security sensors. 8 digital inputs, compatible with voltage free switches.
- 8 general purpose inputs, each general purpose input can be configured as:
 - 0 - 1V analogue input
 - 0 - 10V analogue input
 - 0 - 30V analogue input
 - 4 - 20 mA current loop input
 - Temperature sensor input
 - 8 digital inputs

Outputs

- 8 changeover relays, SPDT.
- 8 SPDT (single pole double throw) relay contacts closures (max. load 1A at 24VDC, or 60Vac, resistive).

Accuracy

- The accuracy of the analogue inputs is better than 5%.

Variables

- User defined internal flags, variables and counters.

PC Link

- RS232 serial communications to the host PC via any spare Com port at up to 19200 bps. Cable length supplied is 4 meters with a DB9 socket. Cable can be RS232 length or asynchronous modems can be used. Can use direct connect or auto dial modems (Hayes compatible asynchronous operating at 2400 bps).

Keypads - 5207 / 5208

- Up to 4 serial keypads (Cat. No. 5208) or up to 5 LCD keypads (Cat. No. 5207 Series) can be connected. Different types of keypads cannot be connected to the same Clipsal HomeMinder Controller. The LCD keypad uses the RS485 serial port.

I/O Expansion Card - 5217AB/2

- The 5217AB/2 provides the user with 8 general outputs and 16 general inputs*. The general inputs can be configured as digital, voltage, current or protected loop inputs and are determined through software configuration. The general outputs consist of changeover relays normally open (N.O.) and normally closed (N.C.) relay contacts. Maximum rated output voltage is 24VDC or 60Vac at 1 amp per output (resistive). Each output has a Status LED.
- The 5217AB/2 General Input/Output Expansion Module fits into the Expansion Connector on the 5200CU/2 Controller. Up to 3 General Input/Output Expansion Modules can be installed in a single Clipsal HomeMinder Controller, or 2 Expansion Modules when a Telephone Module is fitted.

Telephone Interface Card - 5232TI/2

- The 5232TI/2 Telephone Interface provides telephone access to control and monitor the HomeMinder from any touch tone telephone. The 5232TI/2 does not require a PC to operate. Once the 5232TI/2 has been installed and configured, it can control: HomeMinder outputs, variables, and scenarios. All functions of the 5232TI/2 can be password protected to prevent unauthorised access to the system.
- The 5232TI/2 supports voice notification for alarm messaging. Up to four groups of numbers with four different telephone numbers in each group can be notified (16 numbers in total). When an alarm notification call is made, the person receiving the call is required to provide a positive acknowledgement that notification call has been received. The 5232TI/2 can be programmed to try each number a specified number of times, and the period.
- The 5232TI/2 has an onboard modem for applications where remote PC monitoring and maintenance are required.
- The 5232TI/2 supports monitoring to an alarm monitoring station that uses the Ademco High Speed Dialing Format. The 5232TI/2 supports monitoring of 8 zones, Alarm/Restore, Open/Close.
- Access to the 5232TI/2 is through local and remote telephones. Voice prompts guide the user through the available menu options. Voice prompt messages can be recorded and customised in any language through a local phone.
- The 5232TI/2 supports control of up to 8 devices, 8 scenarios and monitor up to 4 alarms.
- The 5232TI/2 Telephone Interface features a direct connection to the Public Switched Telephone Network (PSTN). A cable accessory (purchased separately) may be used to make the mode 3 connection between the Telephone Interface and the PSTN. The 5230CL features a RJ11 Socket at one end and a type 611 socket at the other for simple plug-in connection.

Power Supply

- 16V AC +/-10% from the in-line power pack provided. Power pack has a rated output of 3A.

Auxiliary Power

- 12V DC at 500mA (battery backed) and 12V DC at 700mA (non battery backed) cards and keypads. (Ensure a power budget is calculated to ensure auxiliary supply can service devices.)

Battery

- Circuit will charge an optional 6.5Ahr, 12V DC sealed lead acid battery for stand-by in case of mains power failure (or equivalent).

Controller Case

- Wall mounted mild steel case with screw locked cover. Mountings for two tamper switches and battery. Bottom or rear cable entry points (for 20mm conduit) are provided.

Dimensions

- 300mm x 200mm x 100mm

Weight

- 3.5kg as shipped

Operating Temperature

- 0 - 45°C

Approvals

- EN 50082-1: 1992 EMC Generic Immunity Standards. Part 1. Residential, commercial and light industry.
- AS/NZ 3548: 1995; IEC/CISPR 22: 1993; EN55022: 1995; 89/336/EEC Conducted and Radiated Emission Tests

Interfaces

- C-Bus SIM fitted as standard on all controllers. C-Bus SIM replaces PC Interfaces and incorporates Network Burden and System Clock.
- X-10 On-board. Available via RJ6 socket on motherboard.

BENEFITS

- HomeMinder is a highly functional controller, suitable for complex integration security, lighting, heating, control & sensing and power applications.
- High-level configuration language for creating complex scenes, logic and scheduling.
- Integrates tightly with C-Bus and adds functionality to C-Bus.
- Provides users with a simple to configure GUI to control and monitor control system status.

CATALOGUE NO.	DESCRIPTION
5200CU/2	HomeMinder Controller
5232TI/2	HomeMinder Telephone Interface
5217AB/2	HomeMinder Expansion Card
5207	HomeMinder LCD Keypad (vertical)
5207A	HomeMinder LCD Keypad (horizontal)
5230CL	Telephone Interface Mode 3 Cable
5225	HomeMinder Temperature Sensor

2 Clipsal Sentinel

Clipsal Sentinel is a feature rich controller that is designed with the latest technology to integrate home automation, intruder detection and home communication within a single product. The system is designed to cater for ease of use and the outlook of the product blends with other home appliances. The Clipsal Sentinel, is an intelligent controller suited to home automation and security applications. Controller functions can be extended with the addition of expansion cards, such as general I/O expansion or infrared transmission cards. The Clipsal Sentinel supports common sensors and devices including, but not limited to:

- Passive infrared motion detectors
- Reed switches for doors and windows
- Pressure mats
- Glass break detectors
- Panic push buttons
- Keypads
- Strobes
- Sirens and screamers

The system comprises of the following core units:

Central Intelligence Unit (CIU)

This unit is the central controller and is usually located in a cupboard or storage area. It connects the incoming phone lines and houses the control module, phone interfaces, voice modules, input/output interfaces, battery backup unit and expansion options. The CIU includes a tamper switch and a lockable cover. The unit supports full battery monitoring and conditioning functionality. Programmable parameters, configurations, history log and software modules are stored in non-volatile memory and are retained in the event of a power failure.

LCD Keypad – Jupiter Control Unit (JCU)

The JCU functions as a security keypad and can be used as an optional wall-mounted unit that serves as a full feature hands free phone with built-in microphone and speaker. Special function keys for programming functions and answering machine control keys are built in. LCD panel includes two backlit rows to display mode status, sensor status, time and date information, prompt and alarm messages. Users can control electrical appliances or arm/disarm the security system. Users can change the system time, date, dial out numbers and devices (numeric pager, alphanumeric pager, mobile phones or phones), exit time, entry time, automation timer and security PIN number. Up to a maximum of 4 JCU can be used in a system and when connected, can be used as an intercom system.

FEATURES

Security Alarm Monitoring & Operation

Clipsal Sentinel is certified to UL safety standards, UL1023 and UL985 for Household burglary and fire warning. Each unit is produced and tested in full compliance to these stringent standards. The system supports monitoring of 8 alarm monitoring zones. Each of the zones is separately tagged with a descriptor and different voice message to clearly enunciate the event on detection of an alarm. To expand coverage, Zone Expansion Modules (ZEM) can be added in multiples of 4 zones or 8 zones up to a maximum of 64 zones. In response to an alarm, the system can automatically page for the user and/or call a designated phone number. Upon pick up of the alarm call a pre-programmed voice message is played to indicate the exact type of alarm. The system can also provide a verbal report

of the history indicating the sequence of sensor activation from its history log, and the exact location of the intruder with a dynamic report of sensors being triggered. Voice messages are preprogrammed from a library of over 200 words to provide for different zone descriptors and verbal feedback for switching controls.

Upon receipt of the alarm notification, two way communication can be activated on the JCU enabling listening in and broadcasting through the built in microphone and speaker phone respectively from any remote location using any tone phone. The system supports Ademco Contact ID protocol for CMS monitoring.

Device Control & Monitoring

With the Home Automation Module, the system provides for the control of the switching of electric appliances



CIU901



JCU 909

in different configurations of the following parameters:

- 5 different operating modes i.e. Home, Away, Semi, Entry, Exit.
- 10 different alarm types i.e. Away, Semi, Panic, Tamper, Duress, 24hrs, Gas, Fire, Battery Low, Mains Failure.
- 14 time control programs (TCP) each with Month / Day / Hr / Min / Day / Holiday settings.
- 64 input zones
- A timer function allows outputs to be turned on for specific duration and can be programmed by the user. The system supports a day and night timer for specific lighting/output control.
- Temperature control can be interfaced with the system allowing control of air-conditioning or curtains/blinds in accordance to preset room temperature levels.

- Control of appliances connected to the system is achieved via the JCU or from any DTMF phone at any remote location with simple three digit codes. The system will enunciate all control instructions entered by the user, to confirm the status of the particular appliances. This feedback can also be used as a precautionary status check by the user.
- The system can be expanded to accommodate 32 control points by adding expansion modules. Each module caters for the control of 4 to 8 devices. Control of devices can be achieved using a relay card, Infra Red emitter card or power line carrier card (X-10).
- The system can be expanded via the C Bus interface module to provide for control and monitoring of C-Bus devices.

Configuration Software

Clipsal Sentinel configuration software is Palm OS based and uses drop down menus to define sophisticated control, monitoring and alarm sequence configuration.

Arming / Disarming Operation

The system allows the user to use the JCU to set the following modes:

Away Mode

On selection of AWAY mode, the system triggers the exit sequence allowing the user to exit from the house without activating the alarm. The user defines the sensors that will be triggered and the sequence of triggering. An alarm exit time variable is provided to allow exit from the site. Prior to arming, the system checks all sensors and prompts the user to close doors / windows that are not properly secured or to bypass these sensors. The system can be programmed to then switch off all non-essential lighting and air-conditioning units connected to the system. When set to 'AWAY' mode, the system seizes the phone line on detection of the first ring of the incoming call. The number of rings prior to system pickup is user definable. Upon triggering of the first entry detector, the system can be assigned to automatically switch on the entrance lighting if the system clock indicates evening time.

Home Mode

Detectors specified for the exit sequence are allowed to be activated in an entry sequence within the specified time interval without triggering the alarm and allow the user to enter and approach the JCU to key in a code and activate the 'HOME' mode. A total number of 5 codes are available comprising of one Master code and 4 user codes. User code number 4 is a time based code, set with time boundaries, it only permits access within the specific set time period. Upon activating Home Mode by entering the relevant

code correctly, the security system is disarmed and the system shall search through the memory and play back any messages automatically.

Semi Mode

The system provides for this mode where the user can partially arm selected zones. This allows certain areas of the system to be armed while a user remains in one zone and does not expect movement in other zones. Perimeter detectors are normally armed, whilst internal detectors are bypassed to allow free movement internally while maintaining security.

Television / CCTV Interface

An optional interface can be added to allow the user to view a graphical floor plan with dynamic display of the detector inputs and outputs on a television.

Digital Answering Machine

A digital answering machine is integrated within the system and allows remote callers to leave messages. The system includes a range of intelligent messaging, memo and call screening features usually found on advanced answering machines. The system can be connected directly to a standard trunk line and may also be connected to a PABX system.

Event Log

The system provides a buffer sufficient to hold 80 events stored in FIFO fashion. With this event log, the user is able to trace the sequence of events that triggered the alarm. This 'playback' of events can be viewed on the TV interface, voice playback from the JCU or through a printout, which can be obtained by connecting a printer to a port on the CIU.

C-Bus Interface

An optional C-BUS interface card with full bi-directional communications can be added to monitor and control up to 32 C-Bus Groups Addresses.

DIAGNOSTICS FACILITIES

- Phone line grabber: In the event of emergency and the phone is in use or off hook, the system is able to isolate the phones and activate the alarm response procedure.
- AC power failure detection: The unit is able to detect power failure and automatically switch to battery DC operation without interruption at the same time notifies the owner. When AC resumes, the DC backup is reversed into 'charging' mode.
- Battery protection and low voltage cutoff circuit: When operating on battery power, the system continuously monitors the battery condition to ensure that it is not drained below the rechargeable level.

- Phone line cut detection circuit which, upon detection, can be assigned to trigger the alarm.
- Lightning protection circuit.

Approvals

UL, ULC and AUSTEL approval, tested and certified to BABT standards and SABS CISPR requirements.

CATALOGUE NO.	DESCRIPTION
CIU 901	Clipsal Sentinel Controller Central Intelligence Unit - CIU 8 input zones Siren & strobe output Built-in digital communicator Built-in Voice Module & answering machine (13 mins digital recording)
JCU 909	Keypad Jupiter Control Unit - LCD Keypad (JCU)
Expansion Modules	
HAM4/ZEM2 903B	ZEM2 (8 input zones)
HAM3 904C	HAM3 (8 IR or o/c with Feedback)
HAM4/ZEM2 903B	HAM4 (8 o/c with FeedBack)
Accessories	
C-Bus 930	C-Bus Interface Card
P2Setup 913	P2 Software Setup Tool
RS 913 C	9-way PC Serial Comms Port Cable
PSU 951	Power Supply Unit (110/230Vac Encased (14V, 17A))
CS106-1	Current Sensor Module
IR 922	Infra-red Transmitter LED (pack of 5)
Sub-Assemblies	
CIU PCBA 910	CIU Card (without telephone interface card)
TIF 911	Telephone Interface Card (Singapore & other markets)
TIF 911A	Telephone Interface Card (Australian market)
Central Monitoring Module	
AMS 912	AMS (Alarm Monitoring Station) Software
AMS 914	AMS (Alarm Monitoring Station) c/w: AMS Software, CPU, Monitor, Modem & Speaker