

Citect for Windows Driver Specification Extract SCHLAGE Driver

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1. Target Device(s) and Protocol

1.1 Introduction

This section defines the types of I/O Devices that are targeted by this driver.

1.2 Target Platform

The SCHLAGE driver will be specifically tested on the following platforms

1. Windows NT 4.0 Service Pack 4 with Citect for Windows V5.20 Rev 00 Service Pack B
2. Windows NT 4.0 Service Pack 5 with Citect for Windows V5.21 Rev 00, as required, when released

1.3 Schlage SE 804S / 808S Access Control Units

1.3.1 Device Manufacturer

Schlage Electronics

- SE 804S access control unit EPROM revision H or O or later
- SE 804SN access control unit (firmware revision unavailable)
- SE 804SX access control unit (firmware revision unavailable)
- SE 808S access control unit EPROM revision H or O or later
- SE 808SN access control unit (firmware revision unavailable)
- SE 808SX access control unit (firmware revision unavailable)
- Honeywell R1200C security panels (Malloch 100 series panels) running in Schlage 800 series emulation mode. (firmware revision CH6L)

Note that firmware revision O gives the 804/8 ACU Y2K compliance.

The driver will not be designed to support the 902S or UM8 access control units, despite the fact these devices support most features of the protocol.

1.3.2 Device Definition

The Schlage 804 and 808 ACUs provide access control and security monitoring for up to 4 or 8 doors respectively, and authorisation information for up to 5200 employees (2000 named employees). Access control is provided by means of a keycard system, with the intention that each employee be issued a unique keycard ID. The 804 and 808 ACUs are intended to be dynamically configurable such that access permissions for all keycard codes can be adjusted remotely at any time.

In particular the 800 series ACUs provide the following functionality:

- Receive the identity of command keys presented at a controlled door and control access according to key code.
- Monitor the status (open, closed, locked) and alarm conditions (tamper, alarm) of doors
- Monitor the status of alarm points such as motion detectors (PIR) and window contacts
- Provide remote control for direct actions such as locking / unlocking doors
- Trigger alarm contact closure (for sirens, dial-out etc.)
- Transmit reports of activity in the controlled area when connected to a remote host.

The R1200C security panels provide only security monitoring, without access control. Up to 128 digital inputs and outputs can be connected to motion sensors, door switches, locks etc. to provide security monitoring. The R1200C will be used in Schlage emulation mode, and will appear to the driver as a single 808S ACU. It will not support the full 808S command set and the protocol functionality will be limited to log messages and direct commands, since the R1200C does not

support access control functions. The exact Schlage commands supported by the R1200C are detailed in the document “Malloch Digital ‘Series 150’, Malloch Digital ‘Series 200’ Schlage 808S Interface Programming Instructions”, Issue No 2.D 1 February 1995.

1.3.3 Model numbering

The following table summarises the dynamic data storage capabilities of each of the 800 series ACU models.

	804S	804SN	804SX	808S	808SN	808SX
Access codes	15	120	120	15	120	120
Unnamed key holders	5200	6000	11000	5200	6000	11000
Event log buffer	100	1600	4000	100	1600	4000

The R1200C security panel does not provide named or unnamed key code database storage.

The model numbering for Malloch panels in the following table is provided for identification purposes only. Only the R1200C running in Schlage emulation mode will be supported by the driver.

	R1200	R1200C	R1200CX
Malloch panel series	Unknown	100 / 150	200
Security level	Grade 1	Grade 2	Grade 2
Digital inputs	Unknown	128	24
Digital outputs	Unknown	128	24
Event log buffer	Unknown	Unknown	Unknown

1.3.3.1 Door Numbering Scheme

The access control functions in an 804 or 808 ACU are organised by door number. The 804 supports 4 doors, and the 808 supports 8 doors. A door may be assigned both a door switch and a REX switch from 1 of 32 monitor points. Each door has a corresponding sensor port along the right-hand edge of the ACU and it is generally assumed that the door switch and REX switch for a door come from the MSM attached to the sensor port for that door, however this is not required. Each door also has a lock contact output in the sensor port area. Contact 1 is always the lock contact for door 1 etc.

Each door is identified by a single digit number, 1 to 4 for the 804 and 1 to 8 for the 808.

The access control functions in an R1200C are organised by sector number. The R1200C supports up to 255 sectors, however when running in Schlage emulation mode, only the first 8 sectors are mapped to doors. Sector 1 always relates to Door 1 etc.

Each sector is identified by a single digit number, 1 to 8.

Information about other sectors attached to an R1200C is available indirectly via the MSM.x.y.LOGGED addresses.

1.3.3.2 Monitor Point Numbering Scheme

Each MP, DS and REX in an 800 series ACU is identified by a unique 2 digit number of the form:

X.Y

Where

X is the number of the sensor port to which the MSM is connected to (1 to 4 for the 804, 1 to 8 for the 808), and

Y is specifies which of the 4 sensor terminals (for both 804 and 808) on that port the sensor is connected to.

Example

Door switch 3.4 is wired to MSM 3, terminal 4 and would be assumed to relate to door 3.

Note that although the labelling on the ACU specifies DS, REX, GPS1, GPS2 for the 4 MSM terminals respectively, the terminals are not restricted to these functions.

Door and REX switches are not directly supported by the R1200C. Monitor points are supported, and monitor point 1 is always assumed to be the door switch for door 1 etc.

1.3.4 Communications Method

All driver communication with the 804 and 808 ACUs is performed using a master/slave serial protocol through the ACU's Host port.¹

The serial data format is:

7 bit word length
Odd parity
1 stop bit

Communication with an R1200C panel is performed through the 9 pin serial port located on the Power/Comms board. This port can be configured with DIP switch LK1 to use either RS-232 or RS-485 communication.

The serial data format is user-programmable from the panel's front keypad. The specified communications parameters must match the parameters used by Citect.

1.3.5 Communications/Hardware Configuration

1.3.5.1 804S / 808S Communications Configuration

Before using an 804S / 808S ACU with the SCHLAGE driver, the communication parameters of the host and terminal ports must be initialised. Note that these settings cannot be initialised through the Host port. The ACU must be pre-configured via the Terminal port.

The communication parameters are set as part of the SYSTEM command (from the terminal port interface).

Command **SYSTEM<CR>**

The ACU will respond with a series of questions about the system setup parameters. The questions of interest relating to the communication parameters are:

Response **HOST BAUD RATE: 300 ?**
 Command **9600<CR>**

This sets the host baud rate to 9600.

Response **TERMINAL BAUD RATE: 300 ?**
 Command **9600<CR>**

This sets the terminal baud rate to 9600.

Once the baud rate is changed, the power on the ACU must be cycled before the new rate becomes active.

¹ The Terminal port is reserved for use with a text-based protocol designed to allow easy human interaction. It is possible to fully program the ACU using only a simple terminal VDU connected to the Terminal port. Driver communication however uses a binary protocol through the Host port. There are two versions of the Host port: an RS-232 25D version and an RS-422 4 wire current loop version. The two Host ports are mutually exclusive and only one can be used at a time. The RS-422 connection can be used to network ACUs together. The Host port is also used if a modem is to be connected to the ACU, since the ACU can be programmed to use the Hayes command set to dial the modem.

1.3.5.2 R1200C Communications Configuration

Before using an R1200C panel with the SCHLAGE driver, the communication parameters of the serial port must be initialised.

The communication parameters are set from the panel's front keypad as follows:

With the panel in normal operating mode (AUTH LED not lit – press # to clear the light if required), enter the six digit master code. The default master code is 654321. The AUTH LED will flash.

Set the baud rate:

Press the 6 key. The display will read SYSM.

Press the 3 key. The display will indicate the current baud rate.

Press the 0 key until the desired baud rate is shown. A baud rate of 9600 is recommended.

The available options are 300, 600, 1200, 2400, 4800 and 9600 baud.

Press the * key to accept. (Note: pressing the # key will cancel, however the operating mode can only be set once the baud rate has been set) A double beep indicates a new value has been accepted.

Set the operating mode:

Once the baud rate has been accepted, the display will indicate the current operating mode.

Press the 0 key until the desired operating mode is shown. A mode of N81 is recommended.

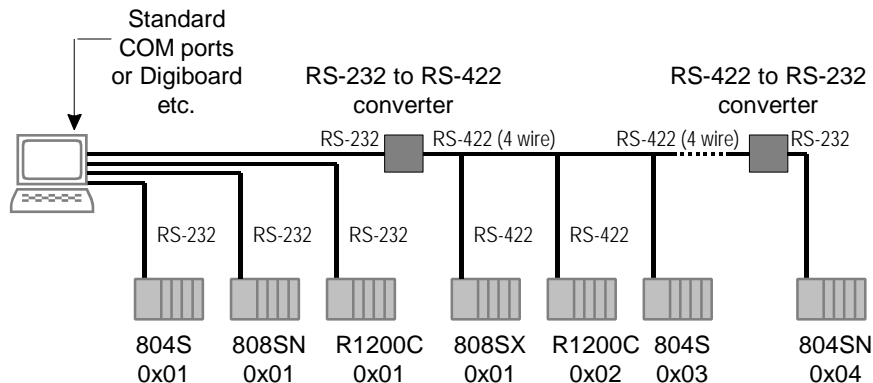
The available options are N81, O81, N82, E81, N71, O71, N72 and E71.

Press the * key to accept. (Or press the # key to cancel.) A double beep indicates a new value has been accepted.

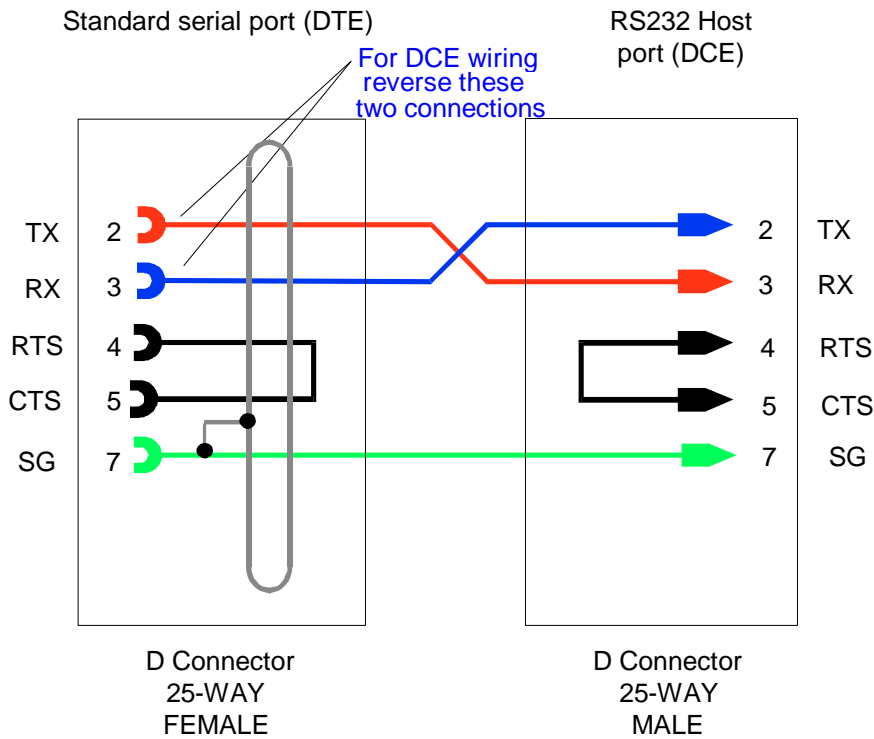
The communication parameters become effective immediately.

1.3.5.3 Hardware Configuration

The diagram below shows a variety of possible connection methods. Note that no two ACUs on the same port may have the same address, but two ACUs on different ports may. Each ACU must be assigned an address even if it is the only ACU on a port. It is also completely acceptable to mix 804, 808 and R1200C (Malloch series 100) units on the same port.



1.3.5.4 Wiring Diagrams



A more detailed wiring scheme for R1200C panels (DB25 / RS485) can be found in drawing AP-009 Rev 2 on p22.4 of the document "Malloch Digital 'Series 150' Grade 2 Alarm Panel Programming Instructions", Issue No 6.B 1 October 1992.

1.3.5.5 I/O Device Settings

All sensor and monitor point inputs are connected along the right-hand edge of the 808 series ACUs. All lock control outputs are connected along the left-hand edge. Note that sensors are generally associated with the lock output contacts having the same number.

1.3.5.6 Software Setup

The Schlage 804/808 ACUs require no special user software to operate correctly. Note however that the baud rate must be set correctly, according to section 1.3.5.

The user should be aware that to operate the Access/Alarm mode of an R1200C sector remotely using the OPEN and CLOSE commands, the sector must be set to Access Level 28. To set a sector to access level 28, use the 2 command from the front panel and then enter 28. To toggle the assignment of a sector to access level 28, press the keys 1 to 8 to control sectors 1 to 8 respectively. To move on to controlling the next row of sectors, press the 0 key. A sector's Access LED will flash if it is assigned to access level 28.

The user should also be aware that to open or close a lock relay on an R1200C panel, the relay must be placed in Host Control Mode using the 7_0_1 command.

1.4 Configuration Files

The SCHLAGE driver supports full remote configuration of Schlage 800 series ACUs using a system of CSV data files (saved as ".TXT"), generated by an external application, and downloaded to the ACU by the driver.

Note that configuration files are not required for R1200C panels (Malloch series 100 panels). The configuration file system applies only to Schlage 800 series ACUs.

Each ACU configured in Citect requires its own set of configuration files, which must reside in a unique directory. The source directory for configuration files is specified in the Address field of the IO devices form. See section 2.5.2 for more information on the format of the address field.

The SCHLAGE driver functionality is designed to be similar to the S764CMD and S764OP drivers developed for use with Schlage 700 series ACUs, hence the format of the configuration files has been copied from the original drivers wherever possible. Due to inherent differences in the two protocols used for the two series however, the configuration files are used in significantly different ways.

The primary difference is that the information in the SCHLAGE driver configuration files is not designed to be incremental. Before information can be downloaded to the ACU, the configuration files need to be re-generated and must contain all information to be sent to the ACU. Information already in the ACU is not retained by the driver or the ACU and will always be overwritten by the information in the new set of configuration files. An obvious consequence of this is that the bulk of information in the configuration files will not change at all between downloads.

If the configuration files do not contain information about all ACU parameters, the missing parameters will be generated automatically by the driver and set to blank, null or 0 as appropriate. This may cause unexpected results when the ACU resumes operation if important information is accidentally omitted in the configuration files. The user should therefore take particular care when generating these files.

The configuration files also differ significantly across the various ACU models. The main reason for this is the extended storage capacity of later model ACUs. The sections below indicate clearly which ACU the listed formats apply to.

The configuration files are stored in CSV format, without column headers. The field names specified in the sections below are descriptive only, and do not appear in the configuration files. The order of fields in each line of the file is the same as the order of fields, top to bottom, given in the tables below.

1.4.1 Date / Time Field (DTF) Format

Several fields in the configuration files require a date and time *range* to be specified. The range is specified in terms of a start hour and minute, and a stop hour and minute. Hours are specified in 24 hour format, with leading 0's if required. In addition, a range can be limited to certain days of the week by specifying a string of eight '1' or '0' values, each digit corresponding to a day of the week, plus 'holiday'. A '1' value against a particular day indicates that the time range is to be active on that day. A '0' value indicates that it is not. When specifying date and time ranges in configuration files, the following format is adopted:

hh:nn hh:nn xxxxxxxx

where the first hh:nn specifies the start time, the second hh:nn specifies the stop time, and the xxxxxxxx represents eight '0' or '1' characters indicating the validity of the time range on the days SUN, MON, TUE, WED, THU, FRI, SAT, HOL respectively. A space separates each of the three fields.

If a DTF field is not required, it may be set to null (i.e. empty, as in ",,") in the CSV file. The driver will take this to mean 'unused' and set all bytes associated with the DTF record to zero, or choose a null TIR as required.

1.4.2 Time Interval Record (TIR) Generation

When communicating with an 800 series ACU through the Terminal port, the user enters text information in response to a series of questions. In particular, when configuring doors or reports etc., the user enters dates and times in terms of start and stop hours and minutes, and valid days of the week. The ACU then interprets this date/time information and stores it in its internal database. When using the binary protocol though the Host port however, date and time information must be provided to the ACU in terms of TIR record ID numbers. A TIR is basically a direct translation of a DTF record into the ACU's native format. The approach used in the ACU is to store the TIRs themselves in a separate table and reference them where required by their ID numbers, 1 to 64.

Date and time information in the CSV configuration files however is always stored as actual DTF records (with full start and stop hours and minutes etc.). The driver must translate the DTFs into a set TIR records, store the TIR records in the appropriate memory addresses, and substitute the original DTF field with the ID numbers of the TIR records generated. To this end, the driver parses DTF records and will generate up to 64 TIRs as needed. If a particular DTF is used in two or more places, a new TIR is not required, and the ID of the previously generated TIR will be used for all

occurrences of this DTF. In this way the driver will always generate the minimum sized spanning set of TIRs for the given configuration files.

The driver will generate a new set of TIR records each time a database download is to be performed, disregarding all previously transmitted TIR information. TIR numbering will start from 1 each time. If translating the DTF records requires more than 64 TIRs to cover the intervals, a hardware alarm will be raised. If not all TIRs are required for a given set of configuration files, the record will be set to 'always', for which the corresponding DTF record is '00:00 24:00 11111111'.

1.4.3 Report Numbering

Several fields in the configuration files are required to specify a report number for an event type. Up to 15 reports can be defined in an 800 series ACU, numbered 1 to 15.

Report numbers 0 and 1 are preset. If report 0 (which cannot be altered) is specified, no data log is printed, no alarms are activated, and no report is output to the Host port. The default settings for report 1 (which can be altered) specify that a data log is to be printed, but alarms are not to be activated and no report is to be output to the Host port.

If no reporting is desired, report number 0 should be specified.

1.4.4 Access Code Numbering

Access codes 0 and 1 are pre-programmed in the 800 series ACUs. Access code 0 allows no access and cannot be altered. Access code 1 which allows access at all doors at all times can be redefined. For temporarily denying access to specific keys, access code 0 can be used as an alternative to deleting the keys from memory.

1.4.5 CSV File Format Limits

The user should be aware of the following limits imposed on CSV files:

Maximum record length	80 characters
Maximum number of fields per record	32 fields

1.4.6 REPORT.TXT

In order to simplify the configuration of event action control, the ACUs implement a system of report definitions. Particular events, such as changes to MSM status points or key card activity, are linked to a particular report definition number. The definition for that report number acts as a simple filter and can decide under what conditions outputs are activated, and how events are communicated or printed.

The REPORT.TXT CSV file contains the report definition for up to 15 reports, each with a unique report number. To link to a particular report, event definitions elsewhere in the database specify a particular report number.

The default value for a field is shown in bold. The default value is automatically applied by the driver when a field or record is not specified.

Field name	Description	Range / Default value						
		804S	804SN	804SX	808S	808SN	808SX	R1200G
REPORT	The report number	1 to 15	1 to 15		1 to 15	1 to 15		
OHO	Output to Host port when building is Open	Y or N	Y or N		Y or N	Y or N		
OHL	Output to Host port when building is Limited	Y or N	Y or N		Y or N	Y or N		
OHC	Output to Host port when building is Closed	Y or N	Y or N		Y or N	Y or N		
OHDTF1	Limit output to host to DTF interval 1	<unused>	<unused>		<unused>	<unused>		
OHDTF2	Limit output to host to DTF interval 2	<unused>	<unused>		<unused>	<unused>		
OHDTF3	Limit output to host to DTF interval 3	<unused>	<unused>		<unused>	<unused>		
CLCO	Close latched contact when building is Open	Y or N	Y or N		Y or N	Y or N		
CLCL	Close latched contact when building is Limited	Y or N	Y or N		Y or N	Y or N		
CLCC	Close latched contact when building is Closed	Y or N	Y or N		Y or N	Y or N		
CLCDTF1	Limit latched contact closure to DTF interval 1	<unused>	<unused>		<unused>	<unused>		
CLCDTF2	Limit latched contact closure to DTF interval 2	<unused>	<unused>		<unused>	<unused>		
CLCDTF3	Limit latched contact closure to DTF interval 3	<unused>	<unused>		<unused>	<unused>		
COCN	Close output contact number ²	0 to 12 ³	0 to 12 ⁴		0 to 16 ³	0 to 16 ³		

² If a value of 0 is entered and any of the contact closure intervals are defined, then a data log will be generated but there will be no contact closure or central station report.

COCO	Close output contact when building is Open	Y or N	Y or N		Y or N	Y or N		
COCL	Close output contact when building is Limited	Y or N	Y or N		Y or N	Y or N		
COCC	Close output contact when building is Closed	Y or N	Y or N		Y or N	Y or N		
COCDF1	Limit contact closure to DTF interval 1	<unused>	<unused>		<unused>	<unused>		
COCDF2	Limit contact closure to DTF interval 2	<unused>	<unused>		<unused>	<unused>		
COCDF3	Limit contact closure to DTF interval 3	<unused>	<unused>		<unused>	<unused>		
PRVNTCLS	Prevent building closure	Y or N	Y or N		Y or N	Y or N		
PRNTASTRSK	Print asterisk (*) with log ⁵	Y or N	Y or N		Y or N	Y or N		

1.4.7 DOOR.TXT

A door definition record maps the sensors for, and defines the behaviour of a door.

Field name	Description	Range / Default value						
		804S	804SN	804SX	808S	808SN	808SX	R1200C
DOOR	The door number	1 to 4	1 to 4		1 to 8	1 to 8		
NAME	The name of the door (24 chars)	<blank>	<blank>		<blank>	<blank>		
RPTKT	Key trace report number	0 to 15	0 to 15		0 to 15	0 to 15		
RPTAG	Access granted report number	0 to 15	0 to 15		0 to 15	0 to 15		
RPTAD	Access denied report number	0 to 15	0 to 15		0 to 15	0 to 15		
RPTDOTL	Door open too long report number	0 to 15	0 to 15		0 to 15	0 to 15		
RPTDFO	Door forced open report number	0 to 15	0 to 15		0 to 15	0 to 15		
RPTCF	Coax failure report number	0 to 15	0 to 15		0 to 15	0 to 15		
RPTSF	Sensor failure report number	0 to 15	0 to 15		0 to 15	0 to 15		
RPTMF	MSM failure report number ⁶	0 to 15	0 to 15		0 to 15	0 to 15		
RPTRG	REX granted report number	0 to 15	0 to 15		0 to 15	0 to 15		
RPTRD	REX denied report number	0 to 15	0 to 15		0 to 15	0 to 15		
SENSOR	Sensor type (NORMAL, OPEN, CLOSED, STATION) ⁷	NORMAL	NORMAL		NORMAL	NORMAL		
PASSBACK	Passback control (NONE, ENTRY, EXIT) ⁸	NONE	NONE		NONE	NONE		
PBTYPE	Passback type (HARD, SOFT) ⁹	HARD	HARD		HARD	HARD		
REVLOCK	Reverse action lock	Y or N	Y or N		Y or N	Y or N		
OPENTIME	Maximum door open time (seconds)	1 to 240	1 to 240		1 to 240	1 to 240		
UNLOCKT	Unlock time (seconds)	1 to 240	1 to 240		1 to 240	1 to 240		
SWITCH	Door switch number	1.1 to 4.4 ¹⁰	1.1 to 4.4 ¹¹		1.1 to 8.4 ¹⁰	1.1 to 8.4 ¹⁰		
REX	Request to Exit switch number	1.1 to 4.4 ¹⁰	1.1 to 4.4 ¹⁰		1.1 to 8.4 ¹⁰	1.1 to 8.4 ¹⁰		
ULKREX	Unlock on Request to Exit	Y or N	Y or N		Y or N	Y or N		
VREXDTF1	Valid REX DTF period 1	<unused>	<unused>		<unused>	<unused>		
VREXDTF2	Valid REX DTF period 2	<unused>	<unused>		<unused>	<unused>		
VREXDTF3	Valid REX DTF period 3	<unused>	<unused>		<unused>	<unused>		
VREXDTF4	Valid REX DTF period 4	<unused>	<unused>		<unused>	<unused>		
AULKDTF1	Auto unlock DTF period 1	<unused>	<unused>		<unused>	<unused>		
AULKDTF2	Auto unlock DTF period 2	<unused>	<unused>		<unused>	<unused>		
AULKDTF3	Auto unlock DTF period 3	<unused>	<unused>		<unused>	<unused>		
AULKDTF4	Auto unlock DTF period 4	<unused>	<unused>		<unused>	<unused>		
READKEY	Allow read key while door open	Y or N	Y or N		Y or N	Y or N		

³ Output contacts 1 to 8 are on the Ann/C module. Output contacts 9 to 12 or 9 to 16 are the lock output contacts (1 to 4 for 804 or 1 to 8 for 808). Use a lock output contact only if it is not used to control a door lock.

⁴ Output contacts 1 to 8 are on the Ann/C module. Output contacts 9 to 12 or 9 to 16 are the lock output contacts (1 to 4 for 804 or 1 to 8 for 808). Use a lock output contact only if it is not used to control a door lock.

⁵ The asterisk character is used to indicate an alarm type event on 5795A Dataloggers.

⁶ Note that in contrast to the S764CMD/OP drivers, this field is required by the SCHLAGE driver. If the MSM fail report is not used, set this number to 0.

⁷ The sensor type specifies the building modes during which the sensor will operate. Enter NORMAL if the sensor is to be always active. Enter STATION if this is a station sensor.

⁸ Enter NONE if anti-passback control is not used at this door. Enter ENTRY or EXIT to prevent passback-access when entering or leaving respectively.

⁹ If ENTRY or EXIT is specified as the passback control method, then the passback type HARD will cause a data log to be printed and passage denied if anti-passback is violated. Passback type SOFT will print a data log but still allow passage.

¹⁰ A switch number of 0.0 indicates that no switch is used.

¹¹ A switch number of 0.0 indicates that no switch is used.

1.4.8 HOLIDAY.TXT

Field name	Description	Range / Default value						
		804S	804SN	804SX	808S	808SN	808SX	R1200G
NUMBER	Holiday number	1 to 30	1 to 30		1 to 30	1 to 30		
DAY	The day of the month for the holiday ¹²	0 to 31	0 to 31		0 to 31	0 to 31		
MONTH	The month of the year for the holiday (JAN, FEB etc.)	JAN	JAN		JAN	JAN		
YEAR	The 4 digit year of the holiday (1985 – 9999) ¹³	1985	1985		1985	1985		

1.4.9 MODEM.TXT

The MODEM.TXT file defines the operation of modem dial-out through the Host port.

Field name	Description	Range / Default value						
		804S	804SN	804SX	808S	808SN	808SX	R1200G
BLDGID1	Line 1 sign on message to identify building (72 chars)	<blank>	<blank>		<blank>	<blank>		
BLDGID2	Line 2 sign on message to identify building (72 chars)	<blank>	<blank>		<blank>	<blank>		
BLDGID3	Line 3 sign on message to identify building (72 chars)	<blank>	<blank>		<blank>	<blank>		
PHONE1	Line 1 phone number to dial – superseded	<unused>	<unused>		<unused>	<unused>		
PHONE2	Line 2 phone number to dial – superseded	<unused>	<unused>		<unused>	<unused>		
PHONE3	Line 3 phone number to dial – superseded	<unused>	<unused>		<unused>	<unused>		
RETRY	The number of times to try calling	1 to 10	1 to 10		1 to 10	1 to 10		
OVERRIDE	The operator override report number	0 to 15	0 to 15		0 to 15	0 to 15		

1.4.10 MONITOR.TXT

The MONITOR.TXT file defines the name and reporting mode of a sensor (monitor) point.

Field name	Description	Range / Default value						
		804S	804SN	804SX	808S	808SN	808SX	R1200G
MONITOR	The monitor point number	1.1-4.4	1.1-4.4		1.1-8.4	1.1-8.4		
NAME	The monitor point name (24 chars)	<blank>	<blank>		<blank>	<blank>		
REPORT	The report number for the monitor point	0 to 15	0 to 15		0 to 15	0 to 15		

1.4.11 ACCESS.TXT

The ACCESS.TXT file defines the set of time intervals for each door for each access code number. Refer to footnote **Error! Bookmark not defined.** for more information. Note that a given ACN may appear up to 8 times in the same file, to allow the 4 time intervals for each of the 8 doors for that ACN to be defined. If an ACN record is omitted or not complete (i.e. not all 8 doors are specified), the access times for each unspecified door are set to 0.

Field name	Description	Range / Default value						
		804S	804SN	804SX	808S	808SN	808SX	R1200G
ACN	The access code number	1 to 15	1 to 15		1 to 15	1 to 15		
DOOR	The door number	1 to 4	1 to 4		1 to 8	1 to 8		
DTF1	DTF interval 1	<unused>	<unused>		<unused>	<unused>		
DTF2	DTF interval 2	<unused>	<unused>		<unused>	<unused>		
DTF3	DTF interval 3	<unused>	<unused>		<unused>	<unused>		
DTF4	DTF interval 4	<unused>	<unused>		<unused>	<unused>		

1.4.12 KEY.TXT

The KEY.TXT file adds or changes key code information in the ACU.

Field name	Description	Range / Default value						
		804S	804SN	804SX	808S	808SN	808SX	R1200G
NUMBER	The command key number (up to 8 digits) ^{14,15} <small>Error! Bookmark not defined.</small>	<number>	<number>		<number>	<number>		

¹² If the day of the month is set to 0, the driver marks the holiday as ‘not used’ in the ACU, and the remaining fields in the file are ignored.

¹³ The valid year range for model SN ACUs is 1991 to 2006

¹⁴ This field must not be blank. There is no default for this field.

¹⁵ The key number must specify all applicable fields for the key type. For example, if a 1040 key is used, the facility code must also be specified. The key type currently in use is defined in SYSTEM.TXT. Precede the key number with the letter “A” if it is a key for an alternate facility code.

NAME	The command key name – unused	<unused>	<unused>		<unused>	<unused>		
ACN	Access code number	0 to 15	0 to 15		0 to 15	0 to 15		
PRIVILEGED	Privileged access	Y or N	Y or N		Y or N	Y or N		
TRACE	Enable key trace ¹⁶	Y or N	Y or N		Y or N	Y or N		
DEFERRED	Enable deferred access decision (requires SE6000)	Y or N	Y or N		Y or N	Y or N		

1.4.13 DELETE.TXT

The DELETE.TXT file removes key code information in the ACU.

Field name	Description	Range / Default value						
		804S	804SN	804SX	808S	808SN	808SX	R1200C
NUMBER	The command key number (up to 8 digits) to delete ^{14,15}	<number>	<number>		<number>	<number>		

1.4.14 SYSTEM.TXT

The SYSTEM.TXT file is used to define several system parameters for the ACU.

Field name	Description	Range / Default value						
		804S	804SN	804SX	808S	808SN	808SX	R1200C
KEYTYPE	The key type used with the ACU (1030, 1040, 1050)	1040	1040		1040	1040		
FACILITY	The facility code for 1030 and 1040 keys ¹⁷	A000	A000		A000	A000		
ALTFACILITY	The alternate facility code for 1030 and 1040 keys ¹⁷	A000	A000		A000	A000		
TERMX	Use XON/XOFF at Terminal port	Y or N	Y or N		Y or N	Y or N		
HOSTX	Use XON/XOFF at Host port	Y or N	Y or N		Y or N	Y or N		
TAMPER	Tamper report number	1 to 15	1 to 15		1 to 15	1 to 15		
POWER	Power fail report number	1 to 15	1 to 15		1 to 15	1 to 15		
GUID	The GUID for the download transaction	0	0		0	0		

1.4.15 USER.TXT

The USER.TXT file defines the valid ACU Operators that can log in through the Terminal port. This information is not critical to the operation of the driver.

Field name	Description	Range / Default value						
		804S	804SN	804SX	808S	808SN	808SX	R1200C
USER	The user number	1 to 8			1 to 8			
NAME	The name of the user (12 chars)	NEW			NEW			
PASSWORD	The password for the user (12 chars)	NEW			NEW			
RANK	The level of authorisation of the user (A to F)	F			F			

1.4.16 FEEDBACK.DBF

The driver will add records to the FEEDBACK.DBF file upon execution of a BATCH command to record the status of database download transactions. This log, together with the configuration files forms an audit trail for changes to the ACU database.

Field name	Length	Type	Description
GUID	9	ASCII String	The GUID for the download transaction
IODEVICE	64	ASCII String	The two hexadecimal address characters from the string in the Citect IO devices form address field ¹⁸
RESULT	12	[ERROR, OK, WARNING]	The status of the action
INFO	80	ASCII String	Any other information the driver can provide (e.g. further information on errors that occurred)

1.5 Event Log File

The 800 series ACUs and the R1200 security panel provide a facility for internally logging changes in the state of any monitor point input. These state changes are date/time stamped and logged as events, and can be buffered by the ACU / security panel for pick-up later by an external host

¹⁶ When enabled, the ACU will issue a report whenever this command key is presented at doors where key trace is enabled.

¹⁷ This field is ignored by the driver for 1050 key types.

¹⁸ The IODEVICE field is provided for human readability only. The driver does not copy the model type and CSV file path used with 800 series ACU into this field.

computer. The logged events provide a complete chronological history of activity for all doors and security devices (PIRs etc.) monitored by the ACUs / panels. The events are retrieved by a host computer one by one using the 800 series protocol, until the event buffer is empty. The ACU must be continually polled by the driver for new events.

The SCHLAGE driver provides three means for accessing status information relating to 800 series ACU door access control:

The first method generates a set of addresses that contain the date, time, key code and status (granted / denied) for the last known access attempt at each door, and the state of each monitor point. These values can be read in Citect at any time and displayed on a graphics screen. These values in each tag is set as appropriate by the driver on reception of a log event relating to that door / key operation, and hence are only updated when the driver sees a new event message.

The information relating to monitor point status is also logged to disk for internal use by the driver so that the previous status of each point can be retrieved after a shutdown / restart. This information must be logged to disk so that the data can be considered current immediately on Citect startup.

The same issue does not apply to the ACCESS.x.XXXX addresses since the ACCESS.x.FLAG address is used to indicate whether the other addresses are valid, and by default ACCESS.x.FLAG is false on startup.

The second method generates a parallel set of building, door and monitor point statuses by directly interrogating the ACU. Since this information is polled, it is always current and does not rely on external events to occur before status can be determined. For R1200C panels however this live status information is available for only the first 8 doors and the first 32 monitor points.

The third method for accessing 800 series ACU event log information is to externally read the event log file the driver generates for each configured IO device. The event log file is a DBF file that contains the raw information for every logged event retrieved by the driver, one event per record. The file resides in the same directory as the configuration files discussed in section 1.4, as set by the IO device's address field. The file may be used for import into a database system, or accessed directly¹⁹.

For R1200C security panels, the set of realtime access status tags do not exist since the security panel does not provide per-door access control and cannot read key codes etc. An event log file of the same format as the 800 series ACUs is still generated however and contains event records for changes in monitor point status, power fail etc. The file also resides in the directory specified in the IO devices form address field.

Note that the event log file for each IO device must be unique. The same file cannot be used by two IO devices.

There are several events that may be logged by the driver in addition to log records received from an IO device:

- The CITECT START event will be logged once for each unit on startup of Citect runtime
- For R1200C units:
 - The MANUAL UNLOCK event will be logged upon successful completion of a 'manual unlock' direct command
 - The MANUAL RELOCK event will be logged upon successful completion of a 'manual relock' direct command
 - The BUILDING OPEN event will be logged when the building status received in a Status message changes to 'Open'.
 - The BUILDING LIMITED event will be logged when the building status received in a Status message changes to 'Limited'.
 - The BUILDING CLOSED event will be logged when the building status received in a Status message changes to 'Closed'.

The name of the event log file is generated by the driver as:

¹⁹ It is recommended that a copy of the event log file be made before importing or accessing it, and that the copy be used for all reading / writing operations. This will prevent a persistent file lock conflict if the driver attempts to access it at the same time.

<unit>.dbf

where <unit> is the name of the IO device set in the Citect IO devices form.

The format of the file is defined as follows:

Field name	Length	Type	Description
EVENT_NO	10	ASCII String	A sequential count of the records received. The data type is ULONG and will roll over at a count of 2 ³² .
IODEVICE	32	ASCII String	The name to identify the site and particular IO device
ITEM	20	ASCII String	The item (door, monitor point, sensor, coax etc.) address. Note that only the address is logged, not the name.
DATE_TIME	20	ASCII String	The date and time stamp from the event message formatted as dd-MMM-yyyy hh:nn:ss
EVENT	4	ASCII String	The code of the log event (700 or 800 series). Log event codes are enumerated in section Error! Reference source not found.
DESC	32	ASCII String	The text description of the event, as indicated in section Error! Reference source not found.
KEY	20	ASCII String	The key number recorded against the logged event, if applicable, otherwise blank.
OPERATOR	32	ASCII String	The name of the operator currently logged into Citect. This value is passed from Citect to the driver using the pseudo-address OPERATOR, and is blank by default.
RAW	80	ASCII String	A complete copy of the raw logged message, as received by the driver

1.6 Log Cache File

To enhance the inbuilt support for R1200C alarm panels, the MSM.x.y.LOGGED addresses provide information on the status of monitor points as reported by the ACU via Log Messages. These addresses allow the status of up to 128 monitor points to be retrieved from the driver, and are generated independently of information provided in the Schlage Status message.

The system is provided because of the extended addressing capability of R1200C units (128 inputs), in comparison to SE804 (16 inputs) or SE808 ACUs (32 inputs). Because backward compatibility with the SE808S protocol must be maintained, R1200C units cannot provide realtime status for monitor points beyond 32 using Status messages, due to the fixed format of Status messages. The information can be retrieved however using Log Messages, and the R1200C generates a log message for each change of state for a monitor point from active to inactive, or shunted to unshunted, and vice versa. The driver provides a facility to trap messages relating to monitor point status as they are read from the unit, and store the changes of state in a local memory cache. For example if monitor point 87 were to become active, an R1200C would generate a log record with event code 14 (MONITOR ACTIVE), and the number 87 in byte 5 of the log message. Upon receipt of this message, the driver updates the local cache data and sets the value for monitor point 87 to '1' (ACTIVE). This value can then be read via the address MSM.21.3.LOGGED. Note that if a monitor point is shunted, the active/clear status cannot be read until the monitor point is unshunted (i.e. an unshunt log message is received for that monitor point).

To preserve the status of monitor points between shutdown and startup of Citect, a cache file is maintained in the same directory as <unit>.dbf. The cache file is a binary format file representing a memory dump of the memory-based cache to disk, and has the extension SLC (Schlage Log Cache). The file is re-written in its entirety every time a monitor point status changes, and is read on startup by the driver to retrieve any previous states.

The driver will destroy the file if a corruption occurs and attempt to re-write it. If the file cannot be read or written, a hardware alarm is raised.

The cache file is also used to commit the sequential ID of the last logged event record in the <unit>.dbf file. This value needs to be cached because it must remain independent of the status of the <unit>.dbf file itself, and must retain its value during shutdown, even if the <unit>.dbf file is deleted or emptied. The last logged event ID is retrieved when a unit is initialised. If the log cache file cannot be found, the last logged event ID is initialised to zero. To reset the last logged event ID, delete the log cache file for the target unit.

1.7 Special Requirements

Schlage electronics recommends the following hardware list when bench testing a new 804 or 808 system. A bench test is recommended, but not a requirement when commissioning a new 804 or 808 system.

1. One sensor module model 2714, 2715, 2814 or 2815
2. A 6 foot (1.83m) coaxial cable with an F-56 connector on each end
3. One command key (model 1030, 1040 or 1050)

Optional test equipment includes:

1. One model 774S MSM and an additional coaxial cable
2. Four toggle switches
3. Four 36k resistors

The bench test procedure is outlined in the SE 804S / 808S User's Manual.

1.8 Maximum Request Length

The maximum request length is 2048 bits.

Note that due to the unusual tag addressing format used by the driver, blocking is unlikely to be effective.

2. User Interface

2.1 Introduction

This section defines how the user will see the driver. This relates directly to how the Citect forms need to be filled out and any special INI options. For the kernel, the debug trace messages and the Stats.Special counters are documented.

2.2 Driver Name

SCHLAGE

2.3 Boards Form

The SCHLAGE driver uses the standard Citect serial drivers. Refer to the Citect help documentation for information on how to configure a standard serial board.

2.3.1 Board Type

COMX

2.3.2 Address

0

2.3.3 IO Port

Blank

2.3.4 Interrupt

Blank

2.3.5 Special Opt

Blank

2.4 Ports Form

The configuration of the Citect ports form must match the user-programmed setting in the ACU. The RS232 format used with the 800 series Host port is fixed at 7 bits, Odd parity, 1 stop bit. The RS232 format used with the R1200C is programmable. Refer to section 1.3.5 for information on how to set the baud rate for each device.

The settings shown can apply equally to 800 series ACUs and R1200C panels.

2.4.1 Baud Rate

The Schlage 800 series ACU and R1200 panels support 300, 1200, 2400, 4800 and 9600 baud at the Host / Serial port.

The rate specified here must match the user-programmed setting for the Host port. 9600 baud is recommended.

2.4.2 Data Bits

7

2.4.3 Stop Bits

1

2.4.4 Parity

ODD_P

2.4.5 Special Opt

There are no special options required. This field should be left blank on the Ports form.

2.5 IO Devices Form

2.5.1 Protocol

The protocol name specified in the IO devices form is used to indicate to the driver whether the unit is an 804, 808 or R1200 series ACU. Combined with the model number specified in the Address field, this determines the command set and address ranges the driver will use when communicating with the IO device.

Target Device	Protocol Name	Driver DLL Name	Driver.DBF Name
SE 804S/SN/SX	SCHLAGE804	SCHLAGE.DLL	SE804.DBF
SE 808S/SN/SX	SCHLAGE808	SCHLAGE.DLL	SE808.DBF
R1200C	SCHLAGE1200	SCHLAGE.DLL	R1200C.DBF

2.5.2 Address

The IO devices form address field is used specify three parameters, in a comma separated variable list.

The first parameter is the two-digit hexadecimal address of the ACU or security panel. The valid range for the address is '00' to 'FF'. The address field is not case sensitive. The driver will not initialise the unit if the address cannot be interpreted as a valid hexadecimal number. The address of an 800 series ACU is set using the "SYSTEM" command though the terminal port. The address of an R1200C panel is set using the 5_15 command from the front keypad (note that the value is set in decimal).

The second parameter is the model type. For 800 series ACUs, valid model numbers are "S", "SN" and "SX". For R1200C security panels, the model number is "C". The model type field is required.

The third parameter is the path specifying the location of the configuration and log files for the unit. The path must be unique for each unit, and need not be fully qualified²⁰. The driver does not support using the same set of configuration files for two units, hence the path must be unique across all Citect IO servers using the SCHLAGE protocol. The path can be specified as a UNC address, and has a total limit of 91 characters. Labels and path substitution parameters are not supported in the address field. A trailing backslash character on the path is required.

For 800 series ACUs only, the driver will look for the configuration files in the directory given. For both 800 series ACUs and R1200C security panels, the driver will look for the feedback file <unit>.dbf in the directory given.

Some examples of address fields are:

```
04,S,C:\CITECT\USER\
B7,SX,\\COMPUTER\SHARE\
CA,C,F:\TEMP\
```

The user should be aware of the following length limits for each of the components of a configuration path:

²⁰ A fully qualified path name (FQPN) includes domain, computer, share and directory information and uniquely identifies a single directory, globally on a computer network. On TCP/IP networks the computer and domain names are specified in terms of fully qualified domain names (FQDNs) or DNS-style addresses, e.g. an FQPN on the internet would be postie.cit.com.au/share/directory. UNC is a strict subset of FQPN.

Drive name	3 characters
Path name	64 characters
File name	16 characters
File extension	8 characters

The user should also be aware of the following limits on the ACU network configuration:

Maximum channels per IO server	32
Maximum units per channel	32

2.6 Pull-down lists Help

The following entries should be included in the Citect HELP.DBF spec file.

TYPE	DATA	FILTER
PROTOCOL	SCHLAGE804	
PROTOCOL	SCHLAGE808	
PROTOCOL	SCHLAGE1200	

~~These entries place all the protocol names in the protocol pull-down list on the IO device form.~~
[CiT Specific]

To place these protocol names in the protocol pull-down list on the IO device form:

Go to the Start Menu -> Run and enter: **G:\CTBIN\index.exe c:\citect\bin\help.dbf type**

[End CiT Specific]

2.7 IO Device Variable Types

2.7.1 Formats and types

Note that the following addresses and data types have no direct equivalent data type in the ACU. Information accessed through these addresses is reconstructed or cached by the driver from several pieces of information gathered from the ACU.

~~The addresses supported by the R1200C are identical to the addresses supported by the 808S.~~
 The addresses supported by an R1200C are a subset of the addresses supported by an 808S. The message formats for common addresses are identical.

Citect address format	Citect data types	Description / Valid Ranges	Applies to
ACCESS.x.FLAG	INT	Flag set by driver after ACCESS.x.KEY or ACCESS.x.TIME is updated. If this flag is already set, the driver may raise a hardware alarm since the Citect project has missed a previous update	804/8S,SN,SX
ACCESS.x.KEY	STRING	The key used for last change of lock status. Read only.	804/8S,SN,SX
ACCESS.x.STATUS	INT	-1 = Not initialised 0 = Access granted 1 = Wrong facility code 2 = Not in memory 3 = Wrong access code 4 = Wrong time of day 5 = Wrong passback 6 = Building not open 7 = VIP code Read only.	804/8S,SN,SX
ACCESS.x.TIME	STRING	Time of last access as taken from log message. Read only.	804/8S,SN,SX
BATCH	INT	A write to this address triggers the download of the information in all configuration files to the IO device. A read from this tag will always return a value of 0.	804/8S,SN,SX
BUILDING.STATUS	INT	0 = Closed 1 = Limited 2 = Open Read only.	804/8S,SN,SX,R1200C

CLOSE	INT	Writing any value to this address triggers the driver to set the building mode to closed in the ACU. A read from this tag will always return a value of 0.	804/8S,SN,SX,R1200C
DELETE.KEY.ALL	INT	Writing any value to this address triggers the driver to delete all keys in the ACU's memory. A read from this tag will always return a value of 0.	804/8S,SN,SX
DOOR.x.CTS.UNLOCK	INT	0 = False 1 = True Read only.	804/8S,SN,SX,R1200C
DOOR.x.FORCED	INT	0 = Door OK 1 = Door open too long or forced Read only.	804/8S,SN,SX
DOOR.x.MSM	INT	0 = MSM OK 1 = MSM fail 7 = Shunt Read only.	804/8S,SN,SX
DOOR.x.SENSOR	INT	0 = Sensor OK 1 = Sensor fail 7 = Shunt Read only.	804/8S,SN,SX
DOOR.x.STATUS	INT	0 = Closed 1 = Forced 2 = Open too long 7 = Shunt Read only.	804/8S,SN,SX
DOOR.x.COAX	INT	0 = Coax OK 1 = Coax fail 7 = Shunt Read only.	804/8S,SN,SX
FBPURGE	INT	A write to this address triggers the driver to delete a count of records from feedback.dbf as indicated by the value written to the tag. A read from this tag will always return a value of 0.	804/8S,SN,SX
FORGIVE	INT	Writing any value to this address triggers the driver to reset (forgive) all anti-passback states. A read from this tag will always return a value of 0.	804/8S,SN,SX
GENERAL.ALARM.MES SAGE	STRING	String containing a general message that can be displayed in an Alarm page of the Citect project. Log messages directed here include KEY TRACE, ATTEMP TO CLOSE, BLDG SHOULD BE CLOSED and ALARM SILENCE.	804/8S,SN,SX,R1200C
GENERAL.ALARM.MES SAGE.FLAG	INT	Flag set by driver after GENERAL.ALARM.MESSAGE is updated. If the flag is already set, a hardware alarm is raised since the Citect project has missed the previous GENERAL.ALARM.MESSAGE.	804/8S,SN,SX,R1200C
LIMIT	INT	Writing any value to this address triggers the driver to set the building mode to limited in the ACU. Write only.	804/8S,SN,SX
LOCK.x.STATUS	INT	-1 = Not Initialised 0 = Locked 1 = Auto unlock 2 = Manual unlock 7 = Shunt Note that if the parameter AlarmIfNotInit is set, a 'bad data' hardware alarm will be raised if the address is not initialised. Read only.	804/8S,SN,SX
MSM.x.y.LOGGED	INT	This status is generated from information in received Log Messages. 0 = Clear 1 = Active 7 = Shunt Read only.	804/8S,SN,SX,R1200C
MSM.x.y.STATUS	INT	This status is generated by interrogating the unit with a STATUS message. 0 = Clear 1 = Active 7 = Shunt Read only.	804/8S,SN,SX,R1200C
OPEN	INT	Writing any value to this address triggers the driver to set the building mode to open in the ACU. A read from this tag will always return a value of 0.	804/8S,SN,SX,R1200C
OPERATOR	STRING	Used to set the name of the current Citect operator in the Driver. The operator name is used when writing to the event log file.	804/8S,SN,SX,R1200C
POWER	INT	0 = OK 1 = Fail 7 = Shunt Read only.	804/8S,SN,SX,R1200C

PURGE	INT	A write to this address triggers the driver to delete a count of log records from <unit>.dbf as indicated by the value written to the tag. A read from this tag will always return a value of 0.	804/8S,SN,SX,R1200C
RELOCK.DOOR.ALL ²¹	INT	Writing any value to this address triggers the driver to send a relock command to all doors. A read from this tag will always return a value of 0.	804/8S,SN,SX,R1200C
RELOCK.DOOR.x	INT	Writing any value to this address triggers the driver to send a relock command to door x. A read from this tag will always return a value of 0.	804/8S,SN,SX,R1200C
REMOTE	INT	This dummy address allows the driver to hold a remote IO device connection. It is required if the ACU is configured as a remote IO device.	804/8S,SN,SX
REQ.x.STATUS	INT	-1 = Not initialised 0 = Access granted 1 = Access denied Read only.	804/8S,SN,SX
REQ.x.TIME	STRING	Time of last access taken from log message Read only.	804/8S,SN,SX
SHUNT.COAX.x	INT	Writing any value to this address triggers the driver to send a shunt command for the coax on door x. A read from this tag will always return a value of 0.	804/8S,SN,SX
SHUNT.DOOR.x	INT	Writing any value to this address triggers the driver to send a shunt command for door x. A read from this tag will always return a value of 0.	804/8S,SN,SX
SHUNT.MP.x.y	INT	Writing any value to this address triggers the driver to send a shunt command for monitor point x.y. A read from this tag will always return a value of 0.	804/8S,SN,SX,R1200C
SHUNT.MSM.x	INT	Writing any value to this address triggers the driver to send a shunt command for MSM x. A read from this tag will always return a value of 0.	804/8S,SN,SX
SHUNT.POWER	INT	Writing any value to this address triggers the driver to send a shunt command for the power sensor. A read from this tag will always return a value of 0.	804/8S,SN,SX,R1200C
SHUNT.SENSOR.x	INT	Writing any value to this address triggers the driver to send a shunt command for the sensor on door x. A read from this tag will always return a value of 0.	804/8S,SN,SX
SHUNT.TAMPER	INT	Writing any value to this address triggers the driver to send a shunt command for the tamper sensor. A read from this tag will always return a value of 0.	804/8S,SN,SX
SILENCE	INT	Writing any value to this address triggers the driver to send a silence command to the ACU. A read from this tag will always return a value of 0.	804/8S,SN,SX
TAMPER	INT	0 = OK 1 = Tamper 7 = Shunt Read only.	804/8S,SN,SX,R1200C
UNLOCK.DOOR.ALL ²¹	INT	Writing any value to this address triggers the driver to send an unlock command to all doors. A read from this tag will always return a value of 0.	804/8S,SN,SX,R1200C
UNLOCK.DOOR.x	INT	Writing any value to this address triggers the driver to send an unlock command to door x. A read from this tag will always return a value of 0.	804/8S,SN,SX,R1200C
UPDATE	INT	A write to this address triggers the driver to synchronise the time and date in the ACU with the local IO server using a Date/Time message. A read from this tag will always return a value of 0.	804/8S,SN,SX,R1200C
UNSHUNT.COAX.x	INT	Writing any value to this address triggers the driver to send an unshunt command for the coax on door x. A read from this tag will always return a value of 0.	804/8S,SN,SX
UNSHUNT.DOOR.x	INT	Writing any value to this address triggers the driver to send an unshunt command for door x. A read from this tag will always return a value of 0.	804/8S,SN,SX

²¹ The use of these addresses requires a significant proportion of the available channel bandwidth to complete. The addresses are provided as a utility function only, and result in the transmission of 4, 8 or 32 individual door unlock or relock commands to the ACU. The time to complete the command at 9600 baud with an R1200C (32 locks) is around 8 seconds. The user should be aware of this time delay, and it is not advisable to repeatedly and continuously send unlock then relock commands on the same channel, as this will significantly reduce Citix's overall response time. Section 2.9.1 provides more information on setting the driver timing parameters for lower channel baud rates.

UNSHUNT.MP.x.y	INT	Writing any value to this address triggers the driver to send an unshunt command for monitor point x.y. A read from this tag will always return a value of 0.	804/8S,SN,SX,R1200C
UNSHUNT.MSM.x	INT	Writing any value to this address triggers the driver to send an unshunt command for MSM x. A read from this tag will always return a value of 0.	804/8S,SN,SX
UNSHUNT.POWER	INT	Writing any value to this address triggers the driver to send an unshunt command for the power sensor. A read from this tag will always return a value of 0.	804/8S,SN,SX,R1200C
UNSHUNT.SENSOR.x	INT	Writing any value to this address triggers the driver to send an unshunt command for the sensor on door x. A read from this tag will always return a value of 0.	804/8S,SN,SX
UNSHUNT.TAMPER	INT	Writing any value to this address triggers the driver to send an unshunt command for the tamper sensor. A read from this tag will always return a value of 0.	804/8S,SN,SX

Where:

- X Is a door number, 1 to 4 in the 804, 1 to 8 in the 808 and 1 to 8 or 1 to 32 in the R1200C
- Y Is a point number, 1 to 4.

2.7.2 Compiler DBF Entries

The UNIT_TYPE value ranges indicate the following basic functions:

Range start	Range end	Primary use
0x0000	0x00FF	Integer Write
0x0100	0x01FF	Integer Read
0x0200	0x02FF	String Write
0x0300	0x03FF	String Read

2.7.2.1 SE804.DBF

TEMPLATE	UNIT_TYPE	RAW_TYPE	BIT_WIDTH	LOW	HIGH	COMMENT
ACCESS.%U(1,1,4).FLAG	0x0100	1	16	0	0	Access flag
ACCESS.%U(1,1,4).KEY	0x0300	7	1024	0	0	Access key number
ACCESS.%U(1,1,4).STATUS	0x0101	1	16	0	0	Access status
ACCESS.%U(1,1,4).TIME	0x0301	7	1024	0	0	Access time
BATCH	0x0000	1	16	0	0	Download batch files
BUILDING.STATUS	0x0102	1	16	0	0	Building status
CLOSE	0x0001	1	16	0	0	Close building
DELETE.KEY.ALL	0x001A	1	16	0	0	Delete all keys
DOOR.%U(1,1,4).CTS.UNLOCK	0x0103	1	16	0	0	Door cont. unlock status
DOOR.%U(1,1,4).FORCED	0x0104	1	16	0	0	Door forced status
DOOR.%U(1,1,4).MSM	0x0105	1	16	0	0	Door MSM status
DOOR.%U(1,1,4).SENSOR	0x0106	1	16	0	0	Door sensor status
DOOR.%U(1,1,4).STATUS	0x0107	1	16	0	0	Door switch status
DOOR.%U(1,1,4).COAX	0x0108	1	16	0	0	Door coax status
FBPURGE	0x001C	1	16	0	0	Purge feedback files
FORGIVE	0x0002	1	16	0	0	Forgive anti-passback
GENERAL.ALARM.MESSAGE	0x0302	7	1024	0	0	General alarm message
GENERAL.ALARM.MESSAGE.FLAG	0x0109	1	16	0	0	Gen alarm message flag
LIMIT	0x0003	1	16	0	0	Limit building
LOCK.%U(1,1,4).STATUS	0x010A	1	16	0	0	Lock status
MSM.%U(1,1,4)%*4.%+U(1,1,4).LOGGED	0x0110	1	16	0	0	MSM logged status
MSM.%U(1,1,4)%*4.%+U(1,1,4).STATUS	0x010B	1	16	0	0	MSM point status
OPEN	0x0004	1	16	0	0	Open building
OPERATOR	0x0200	7	1024	0	0	Operator name
POWER	0x010C	1	16	0	0	Power fail status
PURGE	0x0005	1	16	0	0	Purge log files
RELOCK.DOOR.ALL	0x0006	1	16	0	0	Relock all doors
RELOCK.DOOR.%U(1,1,4)	0x0007	1	16	0	0	Relock door
REMOTE	0x010D	1	16	0	0	Remote IO control
REQ.%U(1,1,4).STATUS	0x010E	1	16	0	0	REX status
REQ.%U(1,1,4).TIME	0x0303	7	1024	0	0	REX time

SHUNT.COAX.%U(1,1,4)	0x0008	1	16	0	0	Shunt door coax
SHUNT.DOOR.%U(1,1,4)	0x0009	1	16	0	0	Shunt door
SHUNT.MP.%U(1,1,4)*4.%+U(1,1,4)	0x000A	1	16	0	0	Shunt monitor point
SHUNT.MSM.%U(1,1,4)	0x000B	1	16	0	0	Shunt door MSM
SHUNT.POWER	0x000C	1	16	0	0	Shunt power fail
SHUNT.SENSOR.%U(1,1,4)	0x000D	1	16	0	0	Shunt door sensor
SHUNT.TAMPER	0x000E	1	16	0	0	Shunt tamper
SILENCE	0x000F	1	16	0	0	Silence alarm
TAMPER	0x010F	1	16	0	0	Tamper status
UNLOCK.DOOR.ALL	0x0010	1	16	0	0	Unlock all doors
UNLOCK.DOOR.%U(1,1,4)	0x0011	1	16	0	0	Unlock door
UPDATE	0x0012	1	16	0	0	Set date/time in ACU
UNSHUNT.COAX.%U(1,1,4)	0x0013	1	16	0	0	Unshunt door coax
UNSHUNT.DOOR.%U(1,1,4)	0x0014	1	16	0	0	Unshunt door
UNSHUNT.MP.%U(1,1,4)*4.%+U(1,1,4)	0x0015	1	16	0	0	Unshunt monitor point
UNSHUNT.MSM.%U(1,1,4)	0x0016	1	16	0	0	Unshunt door MSM
UNSHUNT.POWER	0x0017	1	16	0	0	Unshunt power fail
UNSHUNT.SENSOR.%U(1,1,4)	0x0018	1	16	0	0	Unshunt door sensor
UNSHUNT.TAMPER	0x0019	1	16	0	0	Unshunt tamper

2.7.2.2 SE808.DBF

TEMPLATE	UNIT_TYPE	RAW_TYPE	BIT_WIDTH	LOW	HIGH	COMMENT
ACCESS.%U(1,1,8).FLAG	0x0100	1	16	0	0	Access flag
ACCESS.%U(1,1,8).KEY	0x0300	7	1024	0	0	Access key number
ACCESS.%U(1,1,8).STATUS	0x0101	1	16	0	0	Access status
ACCESS.%U(1,1,8).TIME	0x0301	7	1024	0	0	Access time
BATCH	0x0000	1	16	0	0	Download batch files
BUILDING.STATUS	0x0102	1	16	0	0	Building status
CLOSE	0x0001	1	16	0	0	Close building
DELETE.KEY.ALL	0x001A	1	16	0	0	Delete all keys
DOOR.%U(1,1,8).CTS.UNLOCK	0x0103	1	16	0	0	Door cont. unlock status
DOOR.%U(1,1,8).FORCED	0x0104	1	16	0	0	Door forced status
DOOR.%U(1,1,8).MSM	0x0105	1	16	0	0	Door MSM status
DOOR.%U(1,1,8).SENSOR	0x0106	1	16	0	0	Door sensor status
DOOR.%U(1,1,8).STATUS	0x0107	1	16	0	0	Door switch status
DOOR.%U(1,1,8).COAX	0x0108	1	16	0	0	Door coax status
FBPURGE	0x001C	1	16	0	0	Purge feedback files
FORGIVE	0x0002	1	16	0	0	Forgive anti-passback
GENERAL.ALARM.MESSAGE	0x0302	7	1024	0	0	General alarm message
GENERAL.ALARM.MESSAGE.FLAG	0x0109	1	16	0	0	Gen alarm message flag
LIMIT	0x0003	1	16	0	0	Limit building
LOCK.%U(1,1,8).STATUS	0x010A	1	16	0	0	Lock status
MSM.%U(1,1,8)*4.%+U(1,1,4).LOGGED	0x0110	4	16	0	0	MSM logged status
MSM.%U(1,1,8)*4.%+U(1,1,4).STATUS	0x010B	1	16	0	0	MSM point status
OPEN	0x0004	1	16	0	0	Open building
OPERATOR	0x0200	7	1024	0	0	Operator name
POWER	0x010C	1	16	0	0	Power fail status
PURGE	0x0005	1	16	0	0	Purge log files
RELOCK.DOOR.ALL	0x0006	1	16	0	0	Relock all doors
RELOCK.DOOR.%U(1,1,8)	0x0007	1	16	0	0	Relock door
REMOTE	0x010D	1	16	0	0	Remote IO control
REQ.%U(1,1,8).STATUS	0x010E	1	16	0	0	REX status
REQ.%U(1,1,8).TIME	0x0303	7	1024	0	0	REX time
SHUNT.COAX.%U(1,1,8)	0x0008	1	16	0	0	Shunt door coax
SHUNT.DOOR.%U(1,1,8)	0x0009	1	16	0	0	Shunt door
SHUNT.MP.%U(1,1,8)*4.%+U(1,1,4)	0x000A	1	16	0	0	Shunt monitor point
SHUNT.MSM.%U(1,1,8)	0x000B	1	16	0	0	Shunt door MSM
SHUNT.POWER	0x000C	1	16	0	0	Shunt power fail
SHUNT.SENSOR.%U(1,1,8)	0x000D	1	16	0	0	Shunt door sensor
SHUNT.TAMPER	0x000E	1	16	0	0	Shunt tamper
SILENCE	0x000F	1	16	0	0	Silence alarm
TAMPER	0x010F	1	16	0	0	Tamper status
UNLOCK.DOOR.ALL	0x0010	1	16	0	0	Unlock all doors
UNLOCK.DOOR.%U(1,1,8)	0x0011	1	16	0	0	Unlock door
UPDATE	0x0012	1	16	0	0	Set date/time in ACU
UNSHUNT.COAX.%U(1,1,8)	0x0013	1	16	0	0	Unshunt door coax

UNSHUNT.DOOR.%U(1,1,8)	0x0014	1	16	0	0	Unshunt door
UNSHUNT.MP.%U(1,1,8)%*4.%+U(1,1,4)	0x0015	1	16	0	0	Unshunt monitor point
UNSHUNT.MSM.%U(1,1,8)	0x0016	1	16	0	0	Unshunt door MSM
UNSHUNT.POWER	0x0017	1	16	0	0	Unshunt power fail
UNSHUNT.SENSOR.%U(1,1,8)	0x0018	1	16	0	0	Unshunt door sensor
UNSHUNT.TAMPER	0x0019	1	16	0	0	Unshunt tamper

2.7.2.3 R1200C.DBF

The user should be aware that the address ranges that can be successfully used with an R1200C alarm panel depends on the number of sectors installed in the unit. For example, commands to shunt or unshunt monitor points that correspond to sectors that do not exist will cause erroneous actions to be carried out by the unit. Citect tags should not be configured for monitor point numbers / sectors that do not physically exist.

An example of an erroneous response is than an R1200C with only 8 sectors installed will unshunt sector 1, and report sector 9 unshunted in a log message if a direct command is issued to unshunt monitor point 3.1 (i.e. monitor point 9)

TEMPLATE	UNIT_TYPE	RAW_TYPE	BIT_WIDTH	LOW	HIGH	COMMENT
BUILDING.STATUS	0x0102	1	16	0	0	Building status
CLOSE	0x0001	1	16	0	0	Close building
DOOR.%U(1,1,8).CTS.UNLOCK	0x0103	1	16	0	0	Door cont. unlock status
GENERAL.ALARM.MESSAGE	0x0302	7	1024	0	0	General alarm message
GENERAL.ALARM.MESSAGE.FLAG	0x0109	1	16	0	0	Gen alarm message flag
MSM.%U(1,1,32)%*4.%+U(1,1,4).LOGGED	0x0110	1	16	0	0	MSM logged status
MSM.%U(1,1,8)%*4.%+U(1,1,4).STATUS	0x010B	1	16	0	0	MSM point status
OPEN	0x0004	1	16	0	0	Open building
OPERATOR	0x0200	7	1024	0	0	Operator name
POWER	0x010C	1	16	0	0	Power fail status
PURGE	0x0005	1	16	0	0	Purge log files
RELOCK.DOOR.ALL	0x0006	1	16	0	0	Relock all doors
RELOCK.DOOR.%U(1,1,32)	0x0007	1	16	0	0	Relock door
SHUNT.MP.%U(1,1,32)%*4.%+U(1,1,4)	0x000A	1	16	0	0	Shunt monitor point
SHUNT.POWER	0x000C	1	16	0	0	Shunt power fail
TAMPER	0x010F	1	16	0	0	Tamper status
UNLOCK.DOOR.ALL	0x0010	1	16	0	0	Unlock all doors
UNLOCK.DOOR.%U(1,1,32)	0x0011	1	16	0	0	Unlock door
UPDATE	0x0012	1	16	0	0	Set date/time in ACU
UNSHUNT.MP.%U(1,1,32)%*4.%+U(1,1,4)	0x0015	1	16	0	0	Unshunt monitor point
UNSHUNT.POWER	0x0017	1	16	0	0	Unshunt power fail

2.8 PROTDIR.DBF

TAG	FILE	BIT_BLOCK	MAX_LENGTH	OPTIONS
SCHLAGE804	SE804	2048	2048	0x0006
SCHLAGE808	SE808	2048	2048	0x0006
SCHLAGE1200	R1200C	2048	2048	0x0006

2.9 Parameters and INI options

2.9.1 Standard Parameters

Block	256
Delay	1
MaxPending	2
Polltime	0
Timeout	1000
Retry	2
WatchTime	40

The default values given above for these parameters may need to be overridden in CITECT.INI if the baud rate is changed, or a large number of units are multi-dropped on the same channel.

It is recommended that no more than four units be multi-dropped on a single channel, to maintain optimum performance.

The tables below indicate the preferred values for Timeout and WatchTime for various baud rates and channel configurations, and their calculation methods

- The Timeout value is based on the transmission time required for the longest message for each unit: (values in bytes)

Unit type	Longest single message	Length	Request bytes	Response bytes
804S/SN/SX	Database page	519	517	2
808S/SN/SX	Database page	519	517	2
R1200C	Status message	72	8	64

- The WatchTime value is based on the transmission time required for the worst-case transaction sequence for each unit (also assuming 100ms delay between transactions for 800 series units and 200ms delay between transaction for R1200C units): (values in bytes)

Unit type	Transaction	Length	Request bytes	Response bytes
804S/SN/SX	10 database pages	5190	10 of 517	10 of 2
808S/SN/SX	10 database pages	5190	10 of 517	10 of 2
R1200C	Unlock all + retrieve logs + relock all	994	32 of 9 + 10 of 3 + 32 of 9	32 of 2 + 10 of 26 + 32 of 2

- The approximate transmission times at each baud rate are: (based on 1 start bit, 8 data bits, 1 parity bit, 1 stop bit = 11 bits total per byte)

	Baud rate					
	300	600	1200	2400	4800	9600
Bytes / sec	27.27	54.55	109.1	218.2	436.4	872.7
1 byte	36.7ms	18.3ms	9.17ms	4.58ms	2.29ms	1.15ms
1000 bytes	36.7s	18.3s	9.17s	4.58s	2.29s	1.15s

- The suggested values for Timeout and WatchTime are: (values shown per additional unit should be added to the value given for the first four units)

Baud rate	804S/SN/SX				808S/SN/SX				R1200C			
	First four units		Per additional unit		First four units		Per additional unit		First four units		Per additional unit	
	Timeout	WatchTime	Timeout	WatchTime	Timeout	WatchTime	Timeout	WatchTime	Timeout	WatchTime	Timeout	WatchTime
300	4000	80	+0	+0	4000	80	+0	+0	4000	80	+0	+0
600	3000	60	+0	+0	3000	60	+0	+0	3000	60	+0	+0
1200	2000	50	+0	+0	2000	50	+0	+0	2000	50	+0	+0
2400	1000	40	+0	+0	1000	40	+0	+0	1000	40	+0	+0
4800	1000	40	+0	+0	1000	40	+0	+0	1000	40	+0	+0
9600	1000	40	+0	+0	1000	40	+0	+0	1000	40	+0	+0

Note that the values above are only approximations. If the hardware alarm "IO Device offline" occurs, the value of Timeout should be increased. If the hardware alarm "Driver not responding" occurs, the value of WatchTime should be increased.

2.9.2 Client Parameters

The default value of 8000 ms for the [LAN] Timeout parameter must be overridden in CITECT.INI and set to WatchTime in the previous section x 1000. If the hardware alarm "PLC server request timeout" occurs, the value of Timeout should be increased. The LAN Timeout parameter sets the number of milliseconds a Citect client will wait for a response from an IO server before raising a hardware alarm. The parameter applies equally across networks, and between the server and client running on the same machine.

For example, to set the value of the LAN Timeout parameter to 60 seconds, the following lines should appear in CITECT.INI:

[LAN]
 Timeout = 60000

2.9.3 Driver Specific Parameters

There are several driver-specific parameters that can be used to override default driver behaviour for each unit.

2.9.3.1 Disable Automatic Date/Time Synchronisation

By default the driver will synchronise the date and time in an 800 series ACU or R1200C panel with the time on the IO server when the unit is initialised, or when the unit returns online. This default behaviour can be disabled by setting the AutoTimeSync parameter in CITECT.INI to 0. The section name (<unit>) for the parameter must be set to the same as the unit name specified in the IO devices form.

This parameter can be set per unit.

[<unit>]
 AutoTimeSync=0

2.9.3.2 Disable Hardware Alarm on Alarm Overflow

By default the driver will raise a hardware alarm if the ACCESS.x.FLAG or GENERAL.ALARM.MESSAGE.FLAG flags need to be set to 1 whilst already set at 1. This condition indicates that the Citect project has missed the information in ACCESS.x.STATUS or GENERAL.ALARM.MESSAGE etc. If the Citect project does not need to capture this information, the hardware alarms can be disabled by setting the DisableOverflowAlarm parameter in CITECT.INI to 1.

This parameter applies globally to all units.

[SCHLAGE]
 DisableOverflowAlarm=1

2.9.3.3 Event Log Poll Time

The driver polls for new event log records every 5 seconds by default. This default time can be overridden by setting the EventLogPollTime parameter in CITECT.INI to a new poll time, in milliseconds. The section name (<unit>) for the parameter must be set to the same as the unit name specified in the IO devices form. The following example sets the poll time to 2 seconds.

If the poll time is set to 0, event log polling will be disabled.

The minimum poll time is 1000ms. If a value between 1 and 999 is specified, a value of 1000 will be used. The maximum poll time is 2^{31} ms (~25 days).

This parameter can be set per unit.

[<unit>]
 EventLogPollTime = 2000

2.9.3.4 Event Log Poll Count

The driver retrieves a maximum of 5 (800 series) or 10 (R1200C) event log records per poll time by default. This maximum count can be overridden by setting the EventLogPollCount parameter in CITECT.INI to a new poll count. The section name (<unit>) for the parameter must be set to the same as the unit name specified in the IO devices form. The following example sets the poll count to 20.

The minimum poll count is 1, and the maximum is 2^{31} . Values outside this range will be set to 1.

This parameter can be set per unit.

[<unit>]
 EventLogPollCount = 20

2.9.3.5 Map Log Codes

The driver can map 800 series ACU log codes (1 to 80) to the nearest 700 series log code. This feature is disabled by default, but can be enabled by setting MapLogCodesToS700 to 1 in CITECT.INI. The example below enables the log code mapping. This parameter applies globally to all units.

```
[SCHLAGE]
MapLogCodesToS700 = 1
```

2.9.3.6 Alarm If Not Initialised

The driver provides caching for certain information extrapolated from event log records returned by an ACU. An example of this is the information read from the LOCK.x.STATUS address. Information at these addresses cannot be read directly by the driver, and may never be initialised if a corresponding event log message is not received. To prevent Citect reading invalid status information if the address has not yet been initialised, the driver will raise a hardware alarm for these addresses if a read is attempted. This hardware alarm can be overridden by setting the AlarmIfNotInnit parameter to 0 in CITECT.INI. When set to zero, no hardware alarm will be raised, and a value of -1 (integer types) or "NOT INITIALISED" (string types) will be read from these addresses until they are initialised. The example below disables the hardware alarm. This parameter applies globally to all units and is set to 1 by default.

```
[SCHLAGE]
AlarmIfNotInnit = 0
```

2.9.3.7 Local Cache Time

The driver provides a limited amount of caching for status information returned by the ACU as a compromise between Citect's request blocking and the need for distinct UnitTypes for each type of status information. The need for caching arises because requests for information at several addresses can be satisfied by a single 'ACU Status' message returned by the ACU. The local cache time is designed to be very small so that it does not interfere with the real-time retrieval of data. The cache time can be changed by setting the LocalCacheTime parameter in CITECT.INI to the desired cache time, in milliseconds. The default value for the cache time is 2000ms. The minimum value for the cache time is 0ms. If LocalCacheTime is set to 0, caching will be disabled and all requests will generate comms traffic. The example below sets the cache time to 1.5 seconds. This parameter applies globally to all units.

```
[SCHLAGE]
LocalCacheTime = 1500
```

2.9.3.8 Base Year

The Schlage protocol limits the setting of the current year with a Date / Time message to a range of 16 years spanning 1985 to 2000 inclusive. To extend the range of years useable with an SE804, 808 or R1200C, the driver allows the base year to be shifted forward, giving 16 years of useable dates after the specified base year. The base year is normally defined as 1985 in the Schlage protocol specification, however the base year used with the driver can be assigned any year value after 1900 by setting the BaseYear parameter in Citect.INI. The default value for the base year is 1985. The driver will not accept a base year less than 1900, to prevent specifying two-digit style dates, and will revert to using the default value if a year less than 1900 is specified. The example below sets the base year to 1999, giving a useable date range of 1999 to 2014.

Note that changing the base year to a value other than 1985 will obviously cause the real-time year to be reported incorrectly by the ACU (e.g. on the front panel of the R1200C). This display issue will not affect the year in the timestamp of logged records, which will be logged correctly by the driver. This parameter applies globally to all units.

```
[SCHLAGE]
BaseYear = 1999
```

A further issue with changing the base year to values other than 1985 is the preservation of leap-year synchronisation. If the current real-time year is a leap year, but the value chosen for the base year results in the ACU year being set to a non-leap year, the date changeover on 28th February will not be correct in the ACU. It is recommended that the base year only be set to one of the following values:

Real-time year	Use base year	Compliant until the end of
1999-2002	1997	2012
2003-2006	2001	2016
2007-2010	2005	2020
2011-2014	2009	2024
2015-2018	2013	2028
2019-2022	2017	2032
2023-2026	2021	2036
2027-2030	2025	2040
2031-2034	2029	2044
2035-2038	2033	2048

Other values are possible, however leap year synchronisation will only be maintained if the chosen BaseYear minus 1985 is always a multiple of 4 (note that the year 2000 is a leap year).

The following table details the year reported by an R1200 or 800 series ACU for each of the years from BaseYear to BaseYear + 15

Year offset	R1200C year displayed	800 series year displayed
0	2085	01
1	2086	02
2	2087	03
3	2088	04
4	2089	05
5	1990	06
6	1991	91
7	1992	92
8	1993	93
9	1994	94
10	1995	95
11	1996	96
12	1997	97
13	1998	98
14	1999	99
15	2000	00

For example, if BaseYear was set to 1996, and the current year was 1999, an R1200C would report 2088 and an 800 series ACU would report 04 (from HyperTerminal).

2.9.4 Status Poll Time

Since there are several changes of state which if initiated by a command through the Host port of an 800 series ACU do not generate a log message, the Schlage driver will automatically generate log messages for these state changes based on the information in the status messages. The state changes detected by this system include monitor shunt / unshunt / active / clear, door open / closed, coax fail / OK / shunt / unshunt etc.

To allow state changes to be monitored and logged, the driver polls for new information every 2 seconds by default. This default time can be overridden by setting the StatusLogPollTime parameter in CITECT.INI to a new poll time, in milliseconds. The section name (<unit>) for the parameter must be set to the same as the unit name specified in the IO devices form. The following example sets the poll time to 1 second.

If the poll time is set to 0, status log polling will be disabled.

The minimum poll time is 1000ms. If a value between 1 and 999 is specified, a value of 1000 will be used. The maximum poll time is 2^{31} ms (~25 days).
This parameter can be set per unit.

[<unit>]

StatusLogPollTime = 2000

2.10 Remapping

Remapping is not used.

2.11 Driver Specific Errors

Driver Error	Driver Error Label	Mapped to (Generic Error label)	Meaning of Error Code	Applies to
0x50	DRIVER_UNKNOWN_RESPONSE	GENERIC_INVALID_RESPONSE	ACU returned unrecognised response	804/8S,SN,SX, R1200C
0x51	DRIVER_UNKNOWN_LOG_CODE	GENERIC_INVALID_RESPONSE	ACU returned unrecognised log code	804/8S,SN,SX, R1200C
0x52	DRIVER_BAD_CSV_FORMAT	GENERIC_INVALID_DATA_FORMAT	Bad CSV file format	804/8S,SN,SX
0x53	DRIVER_DB_ATTACH_FAILED	GENERIC_GENERAL_ERROR	ACU could not attach database	804/8S,SN,SX
0x54	DRIVER_DB_PAGE_FAILED	GENERIC_GENERAL_ERROR	ACU failed to store database page	804/8S,SN,SX
0x55	DRIVER_DB_TOO_MANY_TIRS	GENERIC_GENERAL_ERROR	Too many TIRs required to span DTFs	804/8S,SN,SX
0x56	DRIVER_DB_DETACH_FAILED	GENERIC_UNIT_WARNING	ACU could not detach database	804/8S,SN,SX
0x57	DRIVER_DB_CHECKSUM_BAD	GENERIC_UNIT_WARNING	Bad ACU configuration database checksum	804/8S,SN,SX
0x58	DRIVER_KEY_CHECKSUM_BAD	GENERIC_UNIT_WARNING	Bad ACU key database checksum	804/8S,SN,SX
0x59	DRIVER_ADD_KEY_FAILED	GENERIC_GENERAL_ERROR	ACU could not add key	804/8S,SN,SX
0x5A	DRIVER_ACCESS_OVERFLOW	GENERIC_GENERAL_ERROR	Access alarm overflow	804/8S,SN,SX, R1200C
0x5B	DRIVER_GENERAL_OVERFLOW	GENERIC_GENERAL_ERROR	General alarm overflow	804/8S,SN,SX, R1200C
0x5C	DRIVER_INVALID_MODEL	GENERIC_BAD_PARAMETER	Invalid model number specified	804/8S,SN,SX, R1200C
0x5D	DRIVER_INVALID_CSV_PATH	GENERIC_BAD_PARAMETER	Invalid CSV file path specified	804/8S,SN,SX
0x5E	DRIVER_INVALID_UNIT_ADDRESS	GENERIC_BAD_PARAMETER	Invalid unit address specified	804/8S,SN,SX, R1200C
0x5F	DRIVER_INVALID_PROTOCOL	GENERIC_BAD_PARAMETER	Invalid protocol specified	804/8S,SN,SX, R1200C
0x60	DRIVER_CANNOT_FIND_DRIVER_DBF	GENERIC_BAD_PARAMETER	Cannot find DRIVER.DBF	804/8S,SN,SX, R1200C
0x61	DRIVER_CANNOT_OPEN_FILE	GENERIC_GENERAL_ERROR	Cannot open file	804/8S,SN,SX, R1200C
0x62	DRIVER_BAD_UNIT_STATE	GENERIC_SOFTWARE_ERROR	An invalid unit state was encountered	804/8S,SN,SX, R1200C
0x63	DRIVER_FILE_IO_ERROR	GENERIC_GENERAL_ERROR	A file I/O error occurred	804/8S,SN,SX, R1200C
0x64	DRIVER_UNSOLICITED_RESPONSE	GENERIC_INVALID_RESPONSE	An unsolicited response was received	804/8S,SN,SX, R1200C
0x65	DRIVER_CHANNEL_LOCKED	GENERIC_IGNORE	The channel is currently locked against write requests	804/8S,SN,SX

2.12 Driver Error Help

The following entries should be included in the Citect PROTERR.DBF spec file. Note that the information is split into 3 tables for clarity only.

2.12.1 SCHLAGE804 Protocol

PROTOCOL	MASK	ERROR	MESSAGE	REF	ACTION	COMMENT
SCHLAGE804	0	0x50	ACU returned unrecognised response		Check the ACU model number	

SCHLAGE804	0	0x51	ACU returned unrecognised log code	Error! Reference source not found.	Check the ACU model number	The log code is undocumented
SCHLAGE804	0	0x52	Bad CSV file format		Check the format of CSV fields	
SCHLAGE804	0	0x53	ACU could not attach database			The ACU may become inoperable if this occurs
SCHLAGE804	0	0x54	ACU failed to store database page		Check the ACU model number	The ACU rejected a database page
SCHLAGE804	0	0x55	Too many TIRs required to span DTFs		Specify 64 or less time periods in the CSV files	Out of TIRs: more than 64 time periods were specified.
SCHLAGE804	0	0x56	ACU could not detach database			The ACU may become inoperable if this occurs
SCHLAGE804	0	0x57	Bad ACU configuration database checksum		Re-download the database	The ACU configuration database checksum differs from expected.
SCHLAGE804	0	0x58	Bad ACU key database checksum		Delete all keys and re-download the key database	The ACU key database checksum differs from expected.
SCHLAGE804	0	0x59	ACU could not add key		Check if key database full	The ACU rejected an add key message
SCHLAGE804	0	0x5A	Access alarm overflow	2.7.1, 2.9.3.2	Set DisableOverflowAlarm parameter if the alarm flag is not used.	
SCHLAGE804	0	0x5B	General alarm overflow	2.7.1, 2.9.3.2	Set DisableOverflowAlarm parameter if the alarm flag is not used.	
SCHLAGE804	0	0x5C	Invalid model number	2.5.2	Check the model number specified in the IO devices form Address field	A unit will not be put online unless a valid model number is specified.
SCHLAGE804	0	0x5D	Invalid CSV file path	2.5.2	Check the path specified in the IO devices form Address field	
SCHLAGE804	0	0x5E	Invalid unit address	2.5.2	Check the unit address specified in the IO devices form Address field	
SCHLAGE804	0	0x5F	Invalid protocol		Check the combination of model type and protocol	
SCHLAGE804	0	0x60	Cannot find DRIVER.DBF		The file DRIVER.DBF in the BIN directory could not be found	The DRIVER.DBF file is used to format DCBs for error reporting
SCHLAGE804	0	0x61	Cannot open file		The driver failed to open a required data file	Check that the file exists and no locks are held by other applications
SCHLAGE804	0	0x62	Bad unit state		An unexpected sequence of messages was encountered	Report this condition to CiT
SCHLAGE804	0	0x63	File I/O Error		A general file I/O error was encountered	Check that all required files exist and are not locked by other applications
SCHLAGE804	0	0x64	Unsolicited response		An unsolicited response was received	
SCHLAGE804	0	0x65	Channel locked		The channel is locked against write requests	Another unit on the channel is performing a database download

2.12.2 SCHLAGE808 Protocol

PROTOCOL	MASK	ERROR	MESSAGE	REF	ACTION	COMMENT
SCHLAGE808	0	0x50	ACU returned unrecognised response		Check the ACU model number	
SCHLAGE808	0	0x51	ACU returned unrecognised log code	Error! Reference source not found.	Check the ACU model number	The log code is undocumented
SCHLAGE808	0	0x52	Bad CSV file format		Check the format of CSV fields	
SCHLAGE808	0	0x53	ACU could not attach database			The ACU may become inoperable if this occurs
SCHLAGE808	0	0x54	ACU failed to store database page		Check the ACU model number	The ACU rejected a database page

SCHLAGE808	0	0x55	Too many TIRs required to span DTFs		Specify 64 or less time periods in the CSV files	Out of TIRs: more than 64 time periods were specified.
SCHLAGE808	0	0x56	ACU could not detach database			The ACU may become inoperable if this occurs
SCHLAGE808	0	0x57	Bad ACU configuration database checksum		Re-download the database	The ACU configuration database checksum differs from expected.
SCHLAGE808	0	0x58	Bad ACU key database checksum		Delete all keys and re-download the key database	The ACU key database checksum differs from expected.
SCHLAGE808	0	0x59	ACU could not add key		Check if key database full	The ACU rejected an add key message
SCHLAGE808	0	0x5A	Access alarm overflow	2.7.1, 2.9.3.2	Set DisableOverflowAlarm parameter if the alarm flag is not used.	
SCHLAGE808	0	0x5B	General alarm overflow	2.7.1, 2.9.3.2	Set DisableOverflowAlarm parameter if the alarm flag is not used.	
SCHLAGE808	0	0x5C	Invalid model number	2.5.2	Check the model number specified in the IO devices form Address field	A unit will not be put online unless a valid model number is specified.
SCHLAGE808	0	0x5D	Invalid CSV file path	2.5.2	Check the path specified in the IO devices form Address field	This error can only occur after the BATCH tag is written to
SCHLAGE808	0	0x5E	Invalid unit address	2.5.2	Check the unit address specified in the IO devices form Address field	
SCHLAGE808	0	0x5F	Invalid protocol		Check the combination of model type and protocol	
SCHLAGE808	0	0x60	Cannot find DRIVER.DBF		The file DRIVER.DBF in the BIN directory could not be found	The DRIVER.DBF file is used to format DCBs for error reporting
SCHLAGE808	0	0x61	Cannot open file		The driver failed to open a required data file	Check that the file exists and no locks are held by other applications
SCHLAGE808	0	0x62	Bad unit state		An unexpected sequence of messages was encountered	Report this condition to CIT
SCHLAGE808	0	0x63	File I/O Error		A general file I/O error was encountered	Check that all required files exist and are not locked by other applications
SCHLAGE808	0	0x64	Unsolicited response		An unsolicited response was received	
SCHLAGE808	0	0x65	Channel locked		The channel is locked against write requests	Another unit on the channel is performing a database download

2.12.3 SCHLAGE1200 Protocol

PROTOCOL	MASK	ERROR	MESSAGE	REF	ACTION	COMMENT
SCHLAGE1200	0	0x50	ACU returned unrecognised response		Check the model number	
SCHLAGE1200	0	0x51	ACU returned unrecognised log code	Error! Reference source not found.	Check the model number	The log code is undocumented
SCHLAGE1200	0	0x5A	Access alarm overflow	2.7.1, 2.9.3.2	Set DisableOverflowAlarm parameter if the alarm flag is not used.	
SCHLAGE1200	0	0x5B	General alarm overflow	2.7.1, 2.9.3.2	Set DisableOverflowAlarm parameter if the alarm flag is not used.	
SCHLAGE1200	0	0x5C	Invalid ACU model number	2.5.2	Check the model number specified in the IO devices form	A unit will not be put online unless a valid model number is specified.
SCHLAGE1200	0	0x5D	Invalid DBF file path	2.5.2	Check the path specified in the IO devices form Address field	This error will first occur on Citect startup
SCHLAGE1200	0	0x5E	Invalid unit address	2.5.2	Check the unit address specified in the IO devices form Address field	
SCHLAGE1200	0	0x5F	Invalid protocol		Check the combination of model type and protocol	
SCHLAGE1200	0	0x60	Cannot find DRIVER.DBF		The file DRIVER.DBF in the	The DRIVER.DBF file is used to

					BIN directory could not be found	format DCBs for error reporting
SCHLAGE1200	0	0x61	Cannot open file		The driver failed to open a required data file	Check that the file exists and no locks are held by other applications
SCHLAGE1200	0	0x62	Bad unit state		An unexpected sequence of messages was encountered	Report this condition to CiT
SCHLAGE1200	0	0x63	File I/O Error		A general file I/O error was encountered	Check that all required files exist and are not locked by other applications
SCHLAGE1200	0	0x64	Unsolicited response		An unsolicited response was received	
SCHLAGE1200	0	0x65	Channel locked		The channel is locked against write requests	Another unit on the channel is performing a database download

2.13 Debug Messages

The debug messages produced by the driver are marked by the following descriptions

- **TX DATA** – raw data dump of transmitted bytes
- **RX DATA** – raw data dump of received bytes, collected into the frames they arrived in.

The debug system displays both the HEX and ASCII versions of the data bytes, and cross-referencing the information with section **Error! Reference source not found.** with the ASCII output allows easy identification of both the transmitted / received command as well as the address of the target unit. This level of information is sufficient for most debugging.

2.14 Stats Special Counters

Number	Label	Purpose/Meaning of this counter
0	STATS_RX_NACK	Count of "N_" responses received
1	STATS_RX_LOG_MESSAGES	Count of log messages received
2	STATS_TX_DIRECT_COMMAND	Count of direct commands sent
3	STATS_TX_KEY_ADDMODIFY	Count of key add/modify commands sent
4	STATS_TX_KEY_DELETE	Count of key delete commands sent
5	STATS_TX_DATABASE	Count of database messages sent
6	STATS_TX_TIME_SYNC	Count of time sync messages sent
7	STATS_RX_BAD_CHECKSUM	Count of bad message checksums
8	STATS_RX_FRAME	Count of received frames
9	STATS_TX_FRAME	Count of transmitted frames
10	STATS_RX_STATUS	Count of status messages received
11	SLC_READS	Count of reads from Schlage log cache
12	SLC_WRITES	Count of writes to Schlage log cache
13	PURGE_WRITES	Count of the number of writes to the purge tag
14	PURGE_COUNT	Count of the number of records purged
15		
16		
17		
18		
19		
20		

2.15 Hints and Tips

- Add the following entry to CITECT.INI to allow immediate debugging of a port on Citect startup:

```
[SCHLAGE]
DebugStr = <port name> ALL
```


3. References

3.1 References

Copies of the following references may be found in CiT Systems Job No. 4370 Technical Documentation Folder 2

- 1) SE 804S/808S User's Manual Schlage Electronics, Part No 66104574001, Rev C. (Pages 1-201).
- 2) Honeywell R1200C Grade 2 Security Alarm Panel Operating Instructions (for use with Endurance Electronics Series 100/150 Malloch Panels with SYS4 software, Pages 1-107, Dated May 1989).
- 3) Schlage Electronics 804S-808S-902S-UMB Interface Protocol Part No 75107451001, Rev A, Pages 1-26 dated April 19th, 1990.
- 4) Malloch Digital Series "100" & "200" Communications Protocol Manual (Endurance Electronics, Issue 3.D dated 1st May, 1993).
- 5) SE-6000 Manual Module 13 "Remotely Connected Devices" RDI Card, Pages 1-26.
- 6) Ness 5000 8 zone Instruction Manual (Dec 1988) pages 1-29.
- 7) Ness 5000 8 zone Installation Manual (Dec 1988) pages 1-30.
- 8) Eraring R1200 A & B Cables & Terminal Schedules (Doc IDR12AER.XLS), Dated 28/2/91, Titled "As built".
- 9) Z-world Short Form Catalog on Model BL1100 card (RDI).
- 10) Honeywell Access Control System drawing, Rev 6 "As Built", DRW No: 129514/89/ER3.
- 11) Honeywell Security Alarm (R1200C) Schematic Diagram, Rev 6 "As Built", DRW No: 129514/89/ER4.
- 12) Honeywell Station Security System Configuration ACAD 2193 Rev 7.
- 13) Honeywell SN60 Channel Configuration DRW No: 129514/89/229 Rev 2.
- 14) Pacific Power International/Electrical & Control Systems, PACIFIC POWER SECURITY SYSTEM UPGRADE Rev 2, Oct 1998.
- 15) "A Painless Guide to CRC Error Detection Algorithms" by Ross N. Williams, Version 3, 19 August 1993. ftp.adelaide.edu.au/pub/rocksoft/crc_v3.txt (NB URL no longer exists)
- 16) "Malloch Digital 'Series 150', Malloch Digital 'Series 200' Schlage 808S Interface Programming Instructions", Issue No 2.D 1 February 1995. (Endurance Electronics).
- 17) "Malloch Digital 'Series 150' Grade 2 Alarm Panel Programming Instructions", Issue No 6.B 1 October 1992 (Endurance Electronics).

The following references may assist in finding further information:

- 1) <http://www.schlagelock.com/> - Schlage online homepage.
- 2) <http://www.endurance.com.au/> - Endurance Electronics online homepage