

# CR390 CONNECTIONS

Revision number: 00.59

Please, advise us of any errors or omissions in this manual to enable us to improve our service to you.

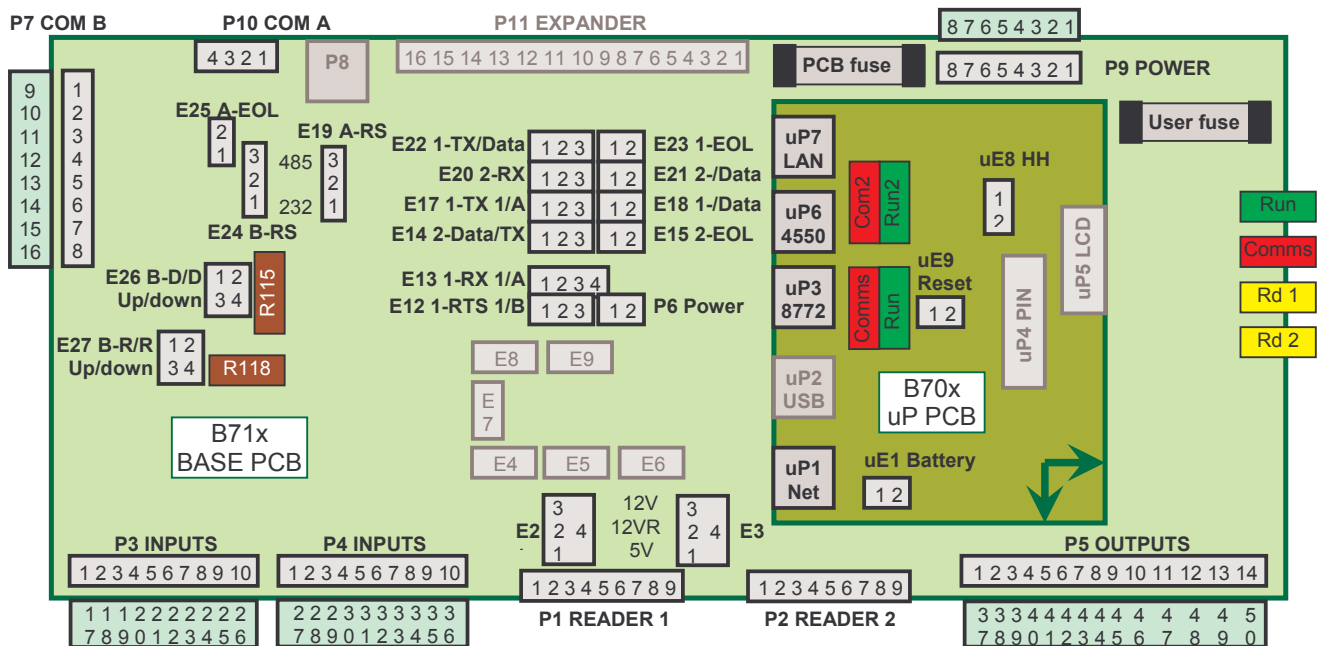
E-mail: [techsupport@softconserv.com](mailto:techsupport@softconserv.com)

**Softcon** is a developer, manufacturer and distributor of electronic and software products, mainly for the access control and building management markets. Thank you for choosing **Softcon** products.

## CONTENTS

1. GENERAL INFORMATION.....	1
2. INSTALLATION OPTIONS.....	4
3. SOFTCON CR37/4 HAND HELD TERMINAL.....	5
1.1 FUNCTION KEYS.....	5
1.2 MENU'S.....	5
1.2.1 Data Base Search.....	5
1.2.2 Data Base Edit.....	5
1.2.3 Card Enter Reader 1/2.....	6
1.2.4 Cards Batch Load.....	6
1.2.5 Reset APB.....	6
1.2.6 Set-up.....	6
1.2.7 Versions.....	13

## 1 GENERAL INFORMATION



The CR390 is similar to the Softcon CR355 controller with the additional comms options of TCP and USB. More memory and additional functions are also available (see specifications and manual). When CR390 is connected as a slave to a LAN controlled via a COM351 (MUX) card in the PC, the COM351 must have version 3.10 or later.

## 2 PCBs

There are 28 sets of jumpers on the CRC, they are marked on the PCB as uE1- E27. Note that jumpers marked as uE are on the top board and jumpers marked as E are on the base board.

### uP PCB

- uP PCB mounts on BASE PCB with bottom edge against P5 and right edge against relays.
- Micro-processor PIC18F8772 programmed via **uP3**, PIC18F4550 via **uP6**. **uE9** must be removed when programming 8772. Future updates will allow programming via Net / USB (Net / USB drivers programmed via **uP6**). Microchip IDE programmers with cable are available from Softcon and the latest FW versions are available on [www.softconserv.com](http://www.softconserv.com).
- Standard NET (**uP1**) and USB (**uP2**) connections. NET crossover cable connected to PC, 1-to-1 to hub. The two LEDs on the Net connector flash alternatively when the CR390 is attempting to connect to the Net and no connection is found. Once connected, the left LED flashes when data is received and the right when data is transmitted.
- **uP7** (future use), **uP4** (PIN pad) and **uP5** (LCD) are generally not installed.
- **uE1** links battery on base PCB to SRAM, RTC. When not in use, remove **uE1**.
- **uE8** enables HH – **HAND PROGRAMMER** (plugged in at **P10**). Remove **uE8** if no HH.
- **uE9** **RESETS** the SRAM and ERAM to defaults when link is inserted (Rd1 and Rd2 LEDs light up) and removed (when Rd1 LED off, Rd2 on). First reset after power-up with reset link in, defaults serial B to test.

The Run and Comms LEDs match the LEDs on the base PCB. Run LED ticking once a second indicates that the 8772 is running and the Run2 LED that the 4550 is running. Comms LED indicates communication with the PC.

### BASE PCB

- Links **E4** to **E11** generally not installed and have etched tracks between pins 1 and 2. See manual for touch readers.
- For all other reader link 1-2 (etched). **E2** (reader 1), **E3** (reader 2) provide 12V (2-3), 12V via 90 ohm (2-4), 5V (1-2).
- For non-serial readers, links **E6** and **E7** for reader 1, and **E10** and **E11** as etched 1-2. For serial readers links 2-3 (etched link must be cut).
- Serial COM A: **E19** selects RS232 (1-2) or RS485 (2-3). **E27** (1-2, 3-4) RS485 pull-up/down, **R115** terminator.
- Serial COM B: **E24** selects RS232 (1-2) or RS485 (2-3). **E26** (1-2, 3-4) RS485 pull-up/down, **R118** terminator.
- **E23** (reader 1), **E15** (reader 2) provide 120 ohm termination for RS485 readers (10k ohm pull-up, down provided).

LINK	FUNCTION
uE1	Battery power
uE8	HH enable
uE9	Memory reset (SW keys not reset)
E2	R1 power <b>1-2=5V</b> , 2-3=12V, 2-4=12rV
E3	R2 power <b>1-2=5V</b> , 2-3=12V, 2-4=12rV
E4	R1 1-2=2-wire, 2-3=1-wire
E5	R1 1-2=2-wire, 2-3=1-wire
E6	R1 1-2=non-serial, 2-3=serial
E7	R1 1-2=non-serial, 2-3=serial
E8	R2 1-2=2-wire, 2-3=1-wire
E9	R2 1-2=2-wire, 2-3=1-wire
E10	R2 1-2=non-serial, 2-3=serial
E11	R2 1-2=non-serial, 2-3=serial
E12	R1-RTS 1-2=R1-RTS, 2-3= SA-RTS

LINK	FUNCTION
E13	R1-RX 1-2=R1-232, 2-3=R1-485, 3-4=SA-485
E14	R2 1-2=232, 2-3=485
E15	R2-485 120 ohm EOL
E17	R1-TX 1-2=R1-TX, 2-3=SA-TX
E18	R1-RX 485
E19	SA-RS 1-2=232, <b>2-3=485</b>
E20	R2-RX 1-2=232, 2-3=485
E21	R2-RX 485
E22	R1 1-2=232, 2-3=485
E23	R1-485 120 ohm EOL
E24	SB-RS 1-2=232, <b>2-3=485</b>
E25	SA= <b>485-120 ohm EOL</b>
E26	SB=485 data 1-2, 3-4 pull-up/down
E27	SB=485 RTS 1-2, 3-4 pull-up/down

R1=Reader 1, R2=Reader 2, SA=Serial A, SB=Serial B, 485=RS485, 232=RS232, rV=Voltage via series resistor. **Bold**-shipped, **inverse**=etched on PCB.

### 3 CONNECTIONS

Connections to the CRC are via screw and lugged connectors. The connectors are removable from the PCB, keeping the cables connected to the connectors. The screw terminal connectors are grouped as follows:

T	P9	POWER
1	1	5V from regulator.
2	2	Ground.
3	3	12V to regulator.
4	4	AC 12V.
5	5	AC 12V.
6	6	AC 9.7V.
7	7	AC 9.7V.
8	8	Ground.

T	P7	COMMS B
9	1	RTS (RS232).
10	2	Ground.
11	3#	Data (RS485).
12	4	/Data.
13	5	RX (RS232).
14	6	TX (RS232).
15	7#	RTS (RS485).
16	8	/RTS (RS485).

\*Note: R115 and R118 are LAN terminators (not shipped)

T	P5	PORT	OUTPUTS**
37	1	4	Relay 4 NC (Capture).
38	2		Relay 4.
39	3	3	Relay 3 NC (Aux output 1).
40	4		Relay 3.
41	5	2*	Relay 2 NO (Latch 2).
42	6		Relay 2.
43	7	1*	Relay 1 NO (Latch 1).
44	8		Relay 1.
45	9		12VAC (user).
46	10		12VAC (user).
47	11		12V (user).
48	12		Ground (user).
49	13		Ground (user).
50	14		12V (user).

P8	COM A (RS232)
1	12V.
2	RX.
3	TX.
4	RTS.
5	Ground.
6	5V.

P10	COM A (RS485 HH)
1	12V.
2	Data.
3	/Data.
4	Ground.

\*Note: Levels set-up of output 1=closed, 2=open, 3=open permanently (unlocked), 4=closed permanently (locked).

\*\* Reserved port allocations are for CR351-4 mode. Port allocations are configurable in CR355 mode.

T	P3	PORT	INPUTS(supervised)**
17	1		Ground.
18	2	1	Input 1 (Egress 1).
19	3	2*	Input 2 (Action complete 1).
20	4	3	Input 3 (Egress 2).
21	5	4*	Input 4 (Action complete 2).
22	6		Ground.
23	7		Input 5 (Booth occupied).
24	8		Input 6 (Capture monitor).
25	9		Input 7 (Reader 1 enable).
26	10		Input 8 (Reader 2 enable).

T	P4	PORT	INPUTS(supervised)**
27	1		Ground.
28	2		Input 9 (APB reader 1).
29	3		Input 10 (APB reader 2).
30	4		Input 11 (APB reset).
31	5		Input 12 (Input for CR355 mode).
32	6		Ground.
33	7	5	Input 13 (Aux input 1).
34	8	6	Input 14 (Aux input 2).
35	9	7	Input 15 (Aux input 3).
36	10	8	Input 16 (Aux input 4).

\*Note: Levels set-up of input 1=closed, 2=open, 3=illegally open, 4=open too long, 5=door not opened.

CR355 supervised input 1=SS, 2=closed, 3=open, 4=OC, 5=illegally open, 6=open too long, 7=door not opened.

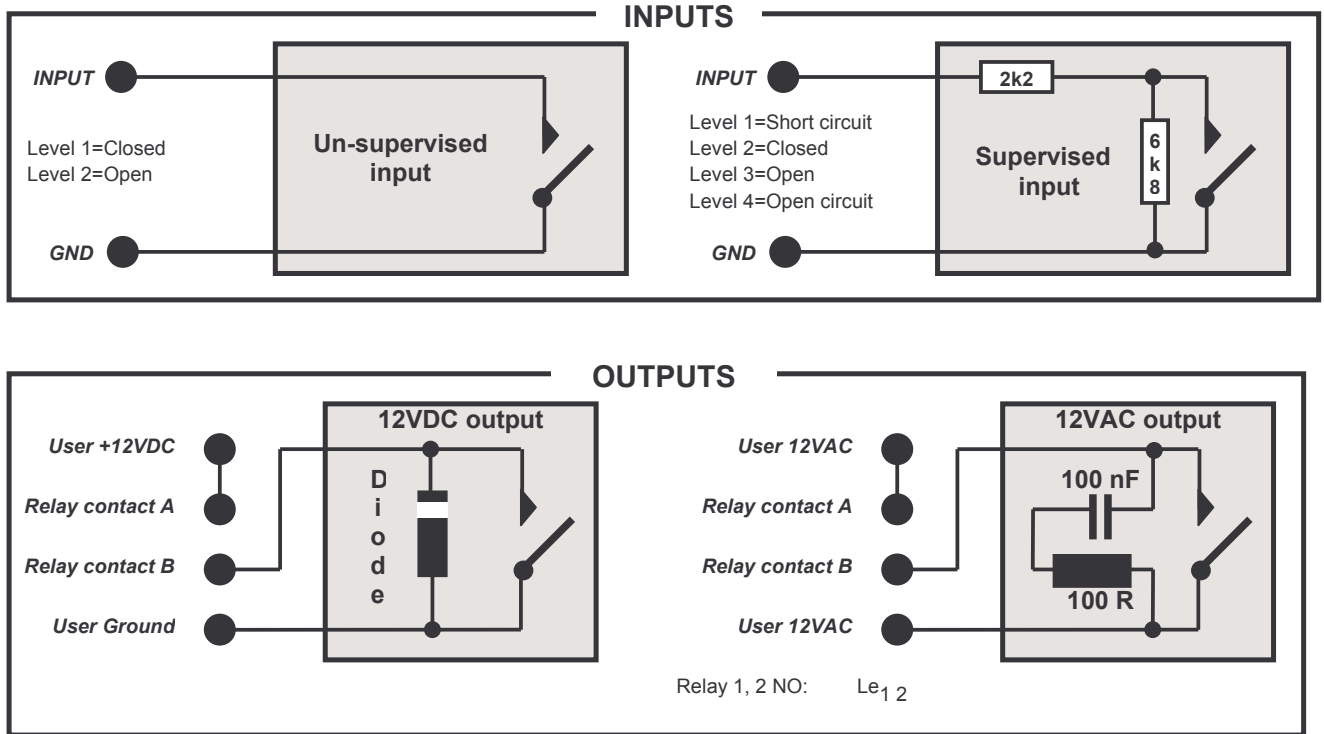
\*\* Reserved port allocations are for CR351-4 mode. Port allocations are configurable in CR355 mode.

P1	READER 1
1	Power 5V (link E3 1-2), 12VR (2-4) or 12V (2-3).
2	Data/LO/Touch.
3	Clock/HI.
4	Ground.
5	Green LED.
6	Yellow LED.
7	Red LED.
8	Data – TX.
9	/Data – RX.

P2	READER 2
1	Power 5V (link E4 1-2), 12VR (2-4) or 12V (2-3).
2	Data/LO/Touch.
3	Clock/HI.
4	Ground.
5	Green LED.
6	Yellow LED.
7	Red LED.
8	Data – TX.
9	/Data – RX.

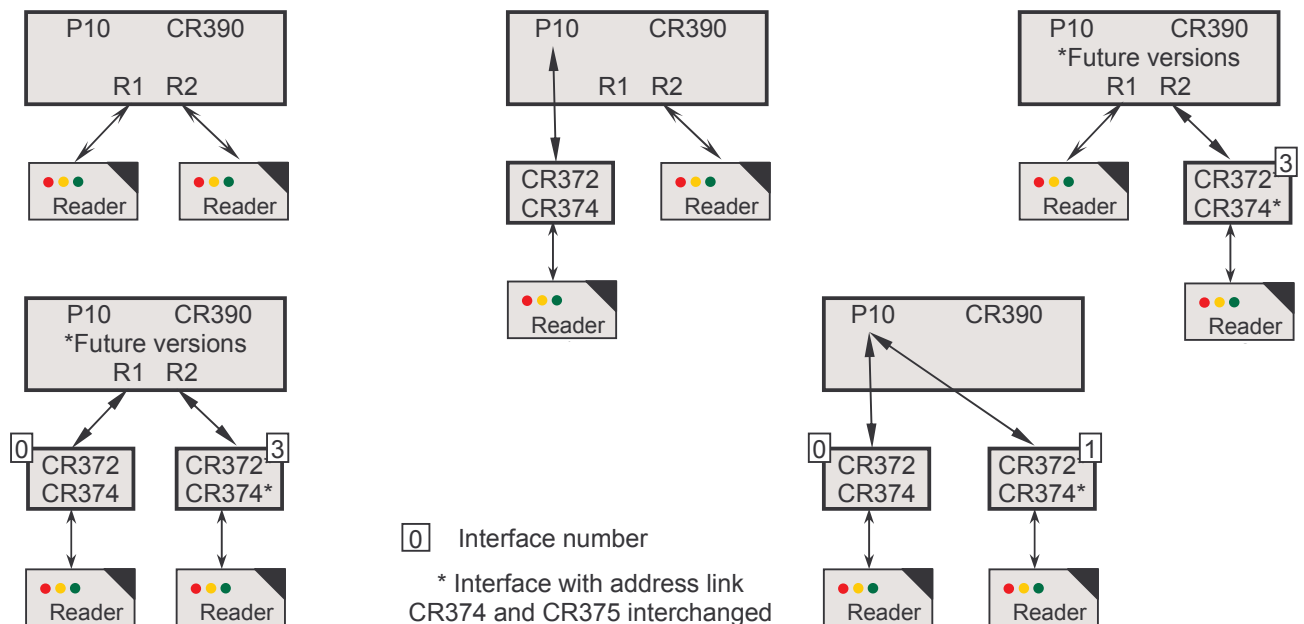
- Node address set with programmer.
- Front processors require the setting (with hand programmer) ABCD where:  
A=node 2 on P2 B=node 1 on P2 (A and B currently not possible)  
C=node 2 on P10 D=node 1 on P10  
0=none, 1=installed

# 4 INSTALLATION OPTIONS

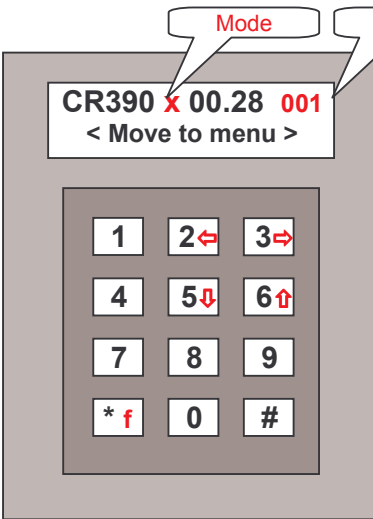


Current versions of the CR390 connect 2 readers with linked egress (push-button), action complete and reader enable inputs and latch output. The readers and input/output (I/O) are connected directly to the controller or via remote interfaces the CR374/5 (with PIN and LCD) or the CR372 interfaces. These interfaces connect via RS485 serial lines. Any combination of connection is possible, e.g. connect the reader and the action complete to the interface, with the egress and latch connected to the CR390 directly, i.e. the reader and I/O are read and controlled directly and on the interfaces.

Presently the ports are reserved (future options will be configurable), with reader 1 being connected to reader 1 (P1) on the controller or on an interface without an address link connected to the RS485 port on P10. Reader 2 is connected to reader 2 (P2) on the controller or on an interface with an address link, connected to the RS485 port COM A (P10). COM A (P10) can multi-drop remote readers 1 and 2.



## 5 Softcon CR374/5 Hand Held Terminal



### Introduction

The CR374 or CR375 hand held terminal provides the means to program the CR390 Controller as stand-alone units and to check of temporary change set-up. Note that in LAN installations, the PC set-up overwrites the set-up done by the programmer. Editing / adding cards for random databases, could cause unknown results (when database locations differ in PC and in controller). The controller should be reset from the PC when cards have been entered via the CR374/5.

The CR374/5 is plugged it into the COM A (P10) connector on the controller for serial communication and power, connections are given above. Pressing the CLEAR button enables the programmer; the display should appear as shown below. The link uE8 on the controller must be in for the programmer to work. The address link E3 of the CR374 must be removed. The FrontP enable for the interface 0 need not be set to 1. When the COM B port is set to HH, the CR374/5 is connected to data /data on the COM B port, linked as RS485.

Mode displays the set mode: o=CR351; f=CR355; c=cash loader; k=key vend, v=vender; a=CR355A

# key is Enter. \* key is Clear or a **function** key, and when kept in, the arrow keys **2←**, **3→**, **5↓** and **6↑** move the cursor as indicated.

Keeping down a key, the selection runs, i.e. as if multiple selections are being made.

### 5.1 FUNCTION KEYS

The left and right arrow keys moves to the required menu.

C390 x 00.28 001 < Move to Menu >	Data Base Search	Data Base edit
	Card enter reader 1	Card enter reader 2
	Cards batch load	Rest APB
	Set-up	Versions

Selecting the down key moves in to the menu. The arrow keys move the cursor to the data to be edited or to the next/previous page of the option. The clear key moves the display to the top menu.

### 5.2 MENU'S

#### 1.1.1 Data Base Search

```
Data base search
CardNum 00000008
```

Search for an individual card. It sets the database pointer to a selected card.

The required card number is entered, followed the CLEAR or ENTER key. The CR374 returns to the main menu. When selecting "Data base edit" card entered will be displayed. Note that when a card is presented at either reader, the pointer is set to that card (unless in the dB edit mode).

#### 1.1.2 Data Base Edit

```
Xref e12 T1T2 CP
00001 11 0101 00
```

Change the status of an individual card.

Xref = card number

e1 = reader one (1 = card valid for reader (enabled), 0 = card not valid)

e2 = reader two (1 = card valid for reader, 0 = card not valid)

Time = **time group** (1-15 or 1-60 for CR355A),

T1 for reader and T2 for reader 2 (T1 is also used for reader 2 if set own TG option is not set).

C = **capture** card (1 = capture, 0 = do not capture)

P = **passback** (1 = ignore any programmed anti-passback)

The up arrow moves to the previous card. The down arrow moves to the next card.

CLEAR key exits to main menu, having stored the new settings.

The following displays are available for certain database selections.

CardNo	PIN Code
12345678	1234

Databases with PIN code, dB6 or 10.

### 1.1.3 Card Enter Reader 1/2

Card enter rd 1
Enter card rd 1

Displays the number of the cards as they are presented to the selected reader.

**Note:** The Controller must be set for the correct card format, client-code and site-code for this function to work. If any of these are wrong then card 65535 is displayed. The card is automatically enabled for both readers and set with time group 1, not capture, not passback.

### 1.1.4 Cards Batch Load

R1e	R2e	Time	Cap	Pas
1	1	01	1	1

Change the status of a batch of cards, e.g. enable cards 1 to 500 for both readers.

The initial display would be:-

Reader 1 and 2 enabled with 1, disabled with 0.

Time group 1 to 15 or 1 to 60 for CR355A. Capture and pass-back enabled with 1, disabled with 0.

Use the right arrow key to move to the second display:-

Cards batch load
00001 to 00500 Enter

Press the ENTER key to store the new settings:

**Note:** You MUST be on the second page when you press the ENTER key. If not use the right arrow to get back to the second page and then press ENTER.

### 1.1.5 Nr Cards Enabled

Displays the number of cards enabled for reader 1, reader 2, for both reader 1 and 2 and for either reader.

### 1.1.6 Reset APB

Clear anti-passback, giving each card one free movement. This is useful where a reader may have been down for a time and people have entered or exited without presenting their cards. Enables the card for both readers if it is enabled for either.

### 1.1.7 Display Card HEX

The cards presented to the readers are displayed in HEX code. The numbers of bits read are displayed. This option is used for debugging purposes.

### 1.1.8 Simulate reader

A Wiegand reader is simulated. See manual for details

### 1.1.9 Sub LAN Status

LAN-status yyy
xxxxxxxx n/y/p/o

\* Only when comms type is LAN Master

Status of 8 slaves (starting at node yyy) Status 1=yes(configured), 2=polling, 3=on-line.

Shift left/right, shows previous/next 8. Key 1 configures the slave and a poll is done.

Key 9 does poll every 5 seconds, ignores on-line to PC – stops on '\*'. Key 8 stops poll.

### 1.1.10 Sub LAN Status

SW version of the uP are displayed.

### 1.1.11 Set-up

Configures the CRC Controller. **The values displayed below are the default values** that are set when the SRAM is 'dropped', i.e. the link uE1, or reset via link uE9. The arrow keys are used to move the cursor position and the data is overwritten. The value options are listed below. An illegal value entered prevents the LCD moving to another display and must be corrected to a legal value. Set-up marked with **\*sw3** only set by SoftWin3 version 0.46 or later.

001 Node address	<b>* Not set by PC</b>	<b>Stored in EEPROM</b>
------------------	------------------------	-------------------------

The node address on the RS485 LAN. No two controllers may have the same address on a LAN.

1 14/5/C/kV/aV/A	<b>*Sw3</b>	<b>Stored in EEPROM</b>
------------------	-------------	-------------------------

The CR390 can function in modes that emulate other Softcon controllers. When set to type 0, CR351/2/4 controllers are emulated (PC type CR351). 1 sets CR355 (PC type CR355), that have configurable inputs and outputs and additional features. Type 2 (PC type Cash) sets cash loader and type 3 (PC type Vender) sets key Vender, 4 (PC type Access Vend) set Access vender and 5 set CR355A (PC type CR355A). Settings 2 to 4 require database mode 10.

1 LA/TCP/MOD/USB		<b>Stored in EEPROM</b>
------------------	--	-------------------------

Comms mode to top (interface to PC / top LAN). LAN (RS485) or serial, TCP, Modem or USB (to be added).

1 n/Master PC-LAN		<b>Stored in EEPROM</b>
-------------------	--	-------------------------

1=Direct to PC comms (interface to PC) or a LAN Master (Interface to slaves).

128.168.100.001a	<b>*Only when PC mode is TCP</b>	<b>Stored in EEPROM</b>
------------------	----------------------------------	-------------------------

Net IP Address.

255-255-255-000m	<b>*Only when PC mode is TCP</b>	<b>Stored in EEPROM</b>
------------------	----------------------------------	-------------------------

Net mask.

128-168-100-002g	<b>*Only when PC mode is TCP</b>	<b>Stored in EEPROM</b>
------------------	----------------------------------	-------------------------

Net gate. Only required when TCP connections via routers.

0004A3-5D3B31mac	<b>*Only when PC mode is TCP</b>	<b>Stored in EEPROM</b>
------------------	----------------------------------	-------------------------

Net MAC. The Hex digits scroll 0-9, A-F with up/down or edit 0-9. Cursor on '-' scrolls up/down to next set-up option. 1<sup>st</sup> digits are reserved (allocated byte IEEE) – the first two digits can only be 00 or 02 (indicates MAC set locally) – if not, MAC will default on next power-up. The last 6 are the HW ID (PCB serial number) - e.g. 06110001 is Hex 5D3B31. On reset, MAC defaults to the HW ID and should ideally not be changed. When MAC is changed (e.g. by replacing a PCB), certain net switches and PCs may need to be reset (for PCs, running ARP -d from the command line, resets the PC MAC settings).

0000 FrontP 3210	<b>*Sw3 Only set by PC when type CR355</b>	<b>Stored in EEPROM</b>
------------------	--	-------------------------

As indicated in the installation options, front end RS484 interfaces connected to the reader ports, provide inputs, outputs and readers remotely. Reader 1 and its I/O are connected to the controller reader 1, or on an interface connected to reader 1.

Reader 1 can have interface 0 (no link on the interface address link) and interface 1 (link on the interface address link). Reader 2 can have interfaces 3 (link on the interface address link). Interface 2 to be included in future versions. To enable an interface, set a 1, e.g. interface 0 and 3, set 1001. Although the programmer is an interface 0, interface 0 need not be set for the programmer (the HH link uE8 acts as an enable for interface 0).

0 Input Expanders	<b>*Not set by PC</b>	<b>Stored in EEPROM</b>
-------------------	-----------------------	-------------------------

A/D expanders (16 inputs). Onboard inputs=1 to 16. Expander 1=17 to 32. Expander 2=33+, etc. Front modules inputs (4 each) after last set input expander (e.g. 17 or 33, etc.).

**0 Output Expanders****\*Not set by PC****Stored in EEPROM**

Output expanders (8 outputs). Onboard outputs 1 to 14. Expander 1=15 to 22. Expander 2=23+, etc. Front modules outputs (6 each) after last set output expander (e.g. 15 or 23, etc.).

**0 n/LOCAL LCD****\*Only when compiled in FW****Stored in EEPROM**

1=has onboard LCD installed.

**31 ab S/M/T/H/C/V****\* Not set by PC**

The communication type for COM A and COM B:

0 = Slave LAN (controller is slave on LAN).      1 = Master LAN (controller is master to LAN, i.e. a MUX).

2 = Test port (displays debugging, set-up).      3 = Hand programmer.

4 = Cash (note) reader.

5 = Vending machine.

When the RAM is 'dropped' (power off and battery link removed), the option defaults to 31.

**01 ab S 192/96/48****\* Not set by PC**

The communication baud rate speed (bits per second) of the main serial port is set at:

0 = 19k2

1 = 9k6

2 = 4k8

3 = 2k4

When the RAM is 'dropped' (power off and battery link removed), the option defaults to 01.

**00 ab Bi 9/8/7****\* Not set by PC**

The communication character bits (bits per character).

**00 ab P n/e/o/1/0****\* Not set by PC**

The communication parity bits: none, even, odd, 1 (high) or 0 (low).

**001 Slaves****\* Only when comms type is LAN Master**

The number of slave controller on the LAN (largest node address), max 128

**1 Latch click en/dis**

Causes DC door latches to click, giving the user an audible indication when the latch opens.

0 = Output relay pulses once per second. 1 = Do not pulse.

**1 AC O/N/C/Ot/Ct**

Action complete is the **Softcon** term for Door Monitoring.

0 = Normally open contact.

1 = No door contact - i.e. disable door monitoring.

2 = Normally closed contact.

3 = Normally open contact with time-out.

4 = Normally closed contact with time-out.

5 = Normally open contact till closed.

6 = Normally closed contact till closed.

**000 10ms ACbounce**

Action complete debouncelength in 10msec multiples. Max is 255 = 2.55 seconds.

0 is 5msec, any other setting has a resolution of 10msec (e.g. 10 = 90 to 110msec).

**1 Booth/none/1dr**

Booth is **Softcon**'s term for "air-lock", "inter-lock" or mantrap, i.e. if a pair of doors is set for booth then they are inter-locked, only one may be opened at any time.

0 = Booth mode.

1 = Normal mode (no booth).

2 = 1 door booth (special sliding door booth).

3 = Interlock.

4 = 1 reader (reader=active rd enable input).

5 = Call booth (Door opened by button, reader in booth).

**2 Nr.doors 0,1,2**

Number of doors controlled by the CRC.

- 0 = No doors (no relay output).
- 1 = One door (output on latch 1 only).
- 2 = Two doors (output latch 1, latch 2).

**0 no/Cap/m/mC/Cd,**

Cards capture type.

- 0 = Normal card reader.
- 1 = Reader in conjunction with a capture bin.
- 2 = Motorized reader (not capture).
- 3 = Motorized read (with capture capabilities).
- 4 = Capture reader (disable card after capture).
- 5 = if expired, capture & exit (special function).
- 6 = if not expire, exit (special function).
- 7 = Pulse capture bin to open.

**000 10msec CapPuls**

When capture is pulse, sets the pulse length in 10msec multiples. Max is 255 = 2.55 seconds. 0 or 1 is 10msec, any other setting has a resolution of 10msec (e.g. 10 = 90 to 110msec).

**00 O/C/xO/xC/x L**

Latch type (1st digit = latch 1, 2nd digit = latch 2).

- 0 = Latch normally open.
- 1 = Latch normally closed.
- 2 = Egress NO, Reader change over.
- 3 = Egress NC, Reader change over.
- 4 = Egress and Reader change over.

**00 LED12 3,f/2,f**

Reader LED type (1st digit = reader 1, 2nd digit = reader 2).

- 0 = 3-LED normal.
- 1 = 3\_LED flash yellow.
- 2 = 2-LED normal.
- 3 = 2\_LED flash yellow.

**00 no/Hi/P ena. R12**

Reader disable option (1st digit = reader 1, 2nd digit = reader 2).

- 0 = Disable arming input for reader.
  - 1 = Enable arming input for reader.
  - 2 = Enable arming input for both reader and free exit button.
- For CR351/5 Input 7, 8 - closed disables reader 1, 2. Other types input settable.

**0 n/LO/LAN/Ena APB**

Anti-pass back (APB) reset. CR351/4 APB reset input is Aux 2. Other types input is configured.

- 0 = Normal operation (hard-wired APB disabled).
- 1 = Input resets APB.
- 2 = If LAN comms off, card granted access if enabled for either reader.
- 3 = Input enables all cards for both readers. When a card enters at either reader, card disabled for both.

**02 db 2C,10 ran**

Data base mode.

- 02 = Running numbered cards. 20k (CR351/4), 64k (others).
- 10 = Random number cards. CR351/4 3k, others: 10k (with PIN), 15k (no PIN).

**0 not/PIN used**

**\*Sw3**

In data mode 10, PIN pads can be used. If used, the database size is 10 000 card, if not the size is 15 000 cards. Using PIN readers (e.g. prox combinations) requires that HH be removed and controller reset before the PIN readers function correctly.

**0 One/each RD Tg**

**\*Sw3**

Cards can use one time group or have different time groups per zone. When using different time groups per zone, the database is smaller for database 2, i.e. 32 000 (64 000 if one time group).

0 n/RandomSearch

Random search database.

V0.33

0 n/Output Group

Output group database.

V0.33

0239 Client Code

000 Site Code

Four and three figure numbers. Together identify the cards as belonging to a particular site/installation. Ignored if client and site codes set to zero.

11 APB en/dis/hi R12

Anti-pass back (APB) enable (1st digit = reader 1, 2nd digit = reader 2).

00 = Enable APB.

11 = Disable APB.

22 = Logical APB. CR351/4 aux in 3 = rd 1, aux in 4 = rd 2. Input settable for other.

< Time zone, Groups >

Use the right or left arrow keys to enter the time group options.

T1 Group 02 MTWTFSSH  
00:00-00:00 1 1 1 1 1 1 1

The up and down arrows move between the time-zones.

The right and left arrows move between the time-groups.

T1 = Card time-zone 1

Group 01 = Card time-group 1

Time-zone of 00:00-00:00 = Never valid.

Time-zone of 10:00-10:00 = Always valid. (24 hours per day)

Time-zone of 08:30-17:15 = Valid from 8:30am to 5:15pm.

There are time-zones and time-groups for when Reader 1, Reader 2, PIN-pad 1, PIN-pad 2, Door 1 open, Door 2 open, inputs and outputs are active. When controller = CR355A, 60 time groups.

TG MAX NOW  
01 00000 00000

V0.33

Access Time group counters. If a MAXimum is set, the time group NOW value increments on enter at reader 1 and decrements on enter reader 2. If NOW is equal for greater than MAX, access is denied. An output can be set to close when NOW equals or greater than MAX.

00-00 Holiday 01

30 holidays in the year, in the format DD-MM. Right and left off the month or date, displays the next, previous holiday.

< Input time gr >

**\*For CR351-4 mode only reserved inputs function**

Input time group for inputs, closed time group – open time group. If door tg also illegal, not opened, too long.

< Output time gr >

**\*For CR351-4 mode only reserved output 3**

Output time group for level 1.

16-17 Reader Tg

18-19 PIN Tg

20-21 Latch Tg

Time groups for when Reader 1-2, PIN 1-2 required and Latch 1-2 open.

\*For CR355A mode only

02-02b Card type

Reader and card type format for reader 1, reader 2.

00 = 40 bit Wiegand.

02 = 44,40,37,36,35(corporate 1000),34,32,30,26 bit Wiegand.

04 = 26 bit Wiegand, 32 bit corporate 1000, 34 bit Dutch.

06 = 32 bit Wiegand (Aritech).



00 Illegal attempts

After X number of illegal attempts (invalid card or PIN) the reader / PIN-pad will be disabled for XX minutes.

00 min reader dis

On multiple illegal entry attempts, the time period for which the reader will be ignored.

00 R12 min ATB

Minutes a card is anti-time back per reader

00 R12 ATB clr/n

00=R1 Clears card from R2 ATB list, R2 clear R1  
01=R1 Clears card from R2 ATB list, R2 not clear R1  
10=R1 Not clears card from R2 ATB list, R2 clear R1  
11=R1 and R2 not clear R2 and R1

hhmmss DDMMYY w

Sets the real time (24 hour clock), date (dd-mm-yy) and day of week (Monday = day 1, Sunday = 7). The enter key must be used to accept this data.

< Modem Init >

Sets the data sent to the modem on power-up. The string is a maximum of 64 characters and is terminated when a 0FFH character (displayed as an underscore \_) is encountered in the string. Carriage return (0DH) is automatically added. Characters are edited by moving to the characters with the right or left keys and entering 0 to 7 or scrolling through the characters via the up and down keys. The \ character is displayed as ¥.

< Input Port type >

**\*CR355 mode**

When the controller type is set to CR355 (setting above), the input ports are configured. Each of the local 16, the front modules 1 and 2 (4 each) supervised inputs are set as **Aux inputs** (normal input) or as a special function input, linked to reader/door 1 or 2. Each input is also set to be a 2 level detection (not supervised) or 4 level (supervised). Level is changed by entering 2 or 4.

**APB follow.** The cards APB is only changed when this input is read as high (open).

**APB reset.** When the input is read as low, all cards that have access on either reader, are given access on both.

**Action complete.** Door monitor.

**Booth occupied.** In booth (mantrap) mode, a low input (closed contact) indicates that the booth is occupied.

**Call booth.** When booth type 5, 1<sup>st</sup> door is opened on Call 1, door 2 on call 2 input low. Second door on reader. Egress functions as normal in egress inputs.

**Capture.** When card capture is set, a low input (contact closed) indicates that a card has been entered in to the capture bin.

**Continue.** Before activating (opening) a latch (1 or 2), inputs Continue (1 or 2) is checked and if low, the activation is done. The door open time-out is timed-out for receiving the Continue low input. Typically used for search applications. Similarly, Continue booth input must be low before the second door of booth is opened – 1<sup>st</sup> door does not check continue booth input. If continue 1or 2 and continue booth inputs are set, both inputs (the continue booth and the second door continue must be loc for the second door to open).

**Count tg reset .** All tg counters are reset to zero when the input is low.

**Egress.** When the Egress or push button input is read as low, the door is opened.

**Latch monitor.** The latch is monitored and only when locked after door closed (action complete) is action complete. When action complete is till door closed, latch is controlled locked on door closed.

**Random search.** Random 0% disables random search for reader 1or 2, Random 100% forces search of all cards at reader 1 or 2.

**Reader enable.** The associated reader is enabled when the input is high (open) and the reader functions normally. When low, the reader is disabled and the red led indicates that data from the reader is ignored.

**Reader tamper.** The latch control (via reader or push button) is disabled when the tamper input is low. This input is connected to a micro switch mounted on the reader that is low when the reader is removed from its mounting.

< Output Port type >

**\*CR355 mode**

When the controller type is set to CR355 (setting above), the output ports are configured. Each of the local 14 (outputs 13 and 14 are virtual), the front modules 1 and 2 (9 each, 9<sup>th</sup> output is virtual) outputs are set as **Aux outputs**, or as special function outputs linked to the reader/door.

**Buzzer.** Audible alarm output.

**Capture.** Control of the capture bin.

**Count Full (1-15).** Access Time group counter – when full, output is activated.

**Interlock busy.** When booth sequence is in progress or interlock with a door open/unlocked, the output is activated.

**LAN off-line.** The output is activated when communication to the LAN is off-line.

**Latch.** Control of the latch.

**LED Green, Red, Yellow.** LEDs are controlled displaying green for access granted, yellow flashing for ready and red for access denied or reader disabled. Flashing red indicates booth busy.

**Random search.** Output driven indicating when random search must be done for card at reader 1 or 2.

**Reader Isolate.** Output driven by the PC when reader is isolated (data is ignored). When set to a **virtual** output, the reader isolate is controlled without an output being controlled.

**1.1.12 Versions**

Displays the Firmware (FW) or Software (SW) versions of the controller processor and the connected interfaces and the electronic ID of the controller and interfaces. These are:

- 8772. Main program (8772 uP) and ID of uP PCB. \
  - ID is used when PC SW keys are loaded in the controller in the Mux mode.
- 4550. Program of 4550 uP.
- u0. Program and ID of interface 0 (connected to P10, no address link on interface).
- u1. Program and ID of interface 1 (connected to P10, address link on interface).

Unknown or not connected interfaces display version ???? and ID 0000.

**1.1.13 Nodes/Event Simulate**

Nodes/Event Simu  
xxx-yyy SimNodes

Nodes/Event Simu  
zzz Event I1 L/H

**Not Stored in EEPROM or BattRAM**

Slave controller responds to own node and to nodes xxx to yyy (if not 0). These setting revert to 0 on power-up.

Zzz events of input 1 low (level 1 - closed) and high (level 2 – open) are simulated to the transaction stack. These events are removed off the stack by the LAN master polling the matching address, or removed if 200 consecutive poll do not match the polling address.