Stand-Alone Data Chip System

OVERVIEW

This Data Chip System supports up to 17 users and each user can be added or deleted in a matter of seconds. This System can be used in a variety of Security and Access Control applications because the built-in relay can switch power to an electric Door Lock, arm or disarm Alarm Systems, shunt Alarm Devices, or operate a Garage Door. The Voltage Driver can operate a LED and a buzzer. The special Printer Output can send System activity data to an optional Corby Printer Interface Module.

QUICK START

Connect ions to the circuit board:

- Two wires from the Reader.

- Two wires from the green LED.

- Two wires with 12 Volts DC power.

- The green LED should be flashing.

Get a Data Chip ready. The Chip you choose is not important because, for now, any Data Chip will work.

- Touch and remove this Chip.

- The LED stops flashing and glows steady.

- Wait two (2) seconds*

- Re-touch the Chip to the Reader and immediately remove it.

- The LED will turn off.

Because this Chip was the first (1st) Chip programmed into the unit, it automatically becomes the Master Chip.

- Please mark this Chip: "MASTER"

And... Because you waited two (2) seconds*, you just programmed the built-in relay to operate for two seconds. Had you waited ten (10) seconds, you would have programmed the relay time for ten seconds.

To QuickTest the unit...

- Momentarily touch your master Chip to the Reader.

If the LED and the relay activate for about two (2) seconds*, the unit is working.

If you are the only person using this unit and a relay activation time of two seconds is OK for you, all programming is finished and the unit is ready for normal use.

If you need to program additional User Chips into the unit, go to the next section titled: ADD THE FIRST USER.

If you want to change the currently programmed relay time, you must first go to the section titled: ERASE EVERYTHING and clear memory. When you're done, return to: SETTING THE RELAY TIME or QUICK START.

ADD THE FIRST USER

- Touch and Hold the Master chip to the reader until the LED turns on.

- Hold fast until the LED starts to flash.

- Immediately remove the Master Chip.

The LED will flash for 30 seconds.

While the LED is flashing:

- Touch the first User Chip to the Reader.

If the LED stops flashing and glows steady for one second, that Data Chip read was OK and the Serial Number of the Chip was successfully stored in memory slot #1.

If the LED continues to flash and does not glow steady for one second... the User Chip probably, was already programmed into the System. Refer to: Testing User Chips

- Remove this Chip. Mark it: "USER 1"

The LED will flash for another 30 seconds while the unit is waiting for the next User Data Chip to be touched to the Reader.

To Add Additional Users Touch the next User Data Chip to the Reader. The LED will turn on steady for one second to verify correct data entry.

- Remove the Chip. Mark it: "USER 2"

Continue until you have touched all the chips to the Reader (16 maximum) and have marked them #1, #2, #3, etc.

To enable you to accurately delete User Chips from this System at a later date, a written record should be kept of all active User Chips by name and their respective memory slot.

Please remember that the Master Chip occupies memory slot zero (0). Regular users occupy slots 1 - 16.

User chips will always be programmed into the lowest available user slot starting at memory slot #1.

How To Exit Program Mode
When you are finished adding users, either do nothing for thirty seconds touch the Master Chip to the Reader. In either case, the LED will turn off and stop flashing. The unit is now ready for normal operation.

Testing User Chips
To test Chips, you may not be in any Add or Erase Mode and the LED must be off. If in doubt, see the above paragraph.

Touch any Chip (the Master or Chips 1-16) to the Reader. If the relay activates, the unit is working correctly. If the LED is connected correctly, it will also activate.

If the wiring and installation is complete, no further programming is necessary and the unit is ready for use.

SETTING THE RELAY TIME

If you want to change any of the relay parameters and you have already executed QUICK START ADD THE FIRST USER, you must go to the Section titled: ERASE EVERYTHING and execute that function. Ensure that the LED is fluttering at the rate of 10X per second (memory clear condition).

Relay Description: It is a "C" form, SPDT type with isolated (dry) relay contacts. To access the relay, connect the White and Green or Blue wires.

Momentary: The relay/door will activate for a pre-selected time period (in seconds) whenever a valid Chip is touched to the Reader.

You may program this System with any momentary time period ranging from one second to 65,535 seconds.

To program this unit for a specific momentary time period return to QUICK START. Substitute your new time (in seconds) for the original two second* time described in that section.

Example: If a sixty (60) second momentary relay time is desired, touch and remove the Master Chip from the reader, wait until the LED turns on, count 60 seconds, and then re-touch the Reader. You are finished programming the relay.

Latching Description: The relay (or the door) will alternate between open & closed. When a valid Chip is touched to the Reader, the door will open. The next time a valid Chip is touched, the door will close. This constant pattern of open/closed will continue and repeat itself.

To enable the Latching Function :

- Remove all power from the unit.
- Cut the metal lead on resistor R1.
- Re-apply power to the unit

Go to QUICK START
that now, there is no wait period. As soon as the first Chip is touched to the Reader, it becomes the Master, the LED will stop fluttering and turn off. No further programming is necessary unless you want to add more users.

ERASE ONE USER

This Section assumes that you have the LED connected correctly and you also have the Master Chip and at least one or more User Chips programmed.

Remember there are a total of 17 memory slots available. The Master Chip always occupies slot #0 and, is never displayed in the below sequence.

Valid User Chips can only occupy memory slots 1 - 16.

To Enter the Erase Mode
- Touch and Hold the Master Chip to the Reader for the three (3) stage LED sequence.

- The LED steady on (1)
- The LED starts to fast flash (2)
- The LED steady on (3)

- Immediately remove the Master Chip

- The LED . turns off

You are now in the Erase Mode.

- The LED will light the 1st time.

- While the LED is lit, touch the Master Chip to the Reader.

The LED immediately starts to flutter and User #1 is automatically erased from memory slot 1.

Touch the Master Chip to the reader whenever the LED count matches the desired user slot you wish to erase.

After displaying the last occupied user slot, the LED stops the sequence, turns off, and the unit is ready for use.

The LED lights in a slow sequence.

A lighted LED last for about three seconds. The first time it lights represents memory slot #1. The second time it lights represents memory slot #2, etc, etc. If all slots are filled, the LED will light for a total of sixteen times.

If slots 1 through 6 are filled with active user chips, the LED will light six times.

If no User Chips are programmed into the unit, the LED will not light.

An erased user slot is replaced with a LED flutter (flash rate of 10 times per second). That specific memory slot is empty because the User Chip that used to occupy that slot was erased at some earlier date.

Example of the LED Pattern
In this example memory slots 1, 3, 5, and 6 are filled with valid Data Chips. Any of these chips may be erased.

Memory slots two & four and memory slots 7 through 16 are currently empty. This is how the LED will light to indicate the memory status.

Lighted LED   Fluttering LED

start 1 2 3 4 5 6 end
start end L F L F L L

ERASE ALL USERS
- Touch and Hold the Master Chip to the Reader for the first four (4) stages of the LED sequence.

- The LED steady on (1)

- The LED starts to fast flash (2)

- The LED steady on (3)

- The LED starts to slow flash (4)

- Immediately remove the Master Chip.

- Immediately re-touch the Master Chip

- The LED . turns off

All User Chips have been erased from the System. Original Master Chip data is retained in slot zero (0). Relay parameters remain unchanged.

This sequence takes approximately 15 seconds.

ERASE EVERYTHING

This option deletes the Master Chip and all the Chips and resets any momentary relay time to zero seconds. If the relay was configured for latching, it will continue to be latching.

- Remove power from the unit.

- Wait ten (10) seconds.

- Connect power while holding either the RTE button or shorting the Orange and Black wires together for 15 seconds.

Memory is now cleared.

The LED will start "fluttering" at the rate of 10 times a second. Go to the section titled: QUICK START

UNLIMITED USERS

For special low security applications such as Elevator Control or general passage doors, the unit can be programmed to accept virtually any Data Chip.

This feature allows a hundreds or thousands of Data Chip holders quick access to the device or area and these users do not have to be individually programmed into the unit. The mere fact that they have a Data Chip in their possession allows them quick access.

WARNING: In this unlimited mode, the unit will accept ANY Data Chip ever manufactured or distributed by any vendor.

To program for unlimited users:

- Remove power from t he unit

- Cut the metal lead on resistor R2

- Re-apply power to the unit

The unit is now in Unlimited Mode.

There are 17 individual memory slots still available for programming. The only reason to fill these memory slots is to have a printed record of these users as they use this Data Chip unit. An optional Corby Printer Interface (CPI) module is required.

If a printer is used and an unprogrammed chip is touched to the Reader, it will print as CODE ER 00099.

Programmed Chips will print their actual memory location slots, 00000 for the Master and 00001 thru 00016 for any User Chips.

AUDIBLE FEEDBACK

A miniature 12VDC electronic buzzer can be wired in parallel with the LED to produce audible feedback which can assist you while programming the unit. It is also useful for normal Data Chip operation.

Use Radio Shack part #273-026 or #273-055 and see Diagram 2 for installation instructions.

PRINTED REPORTS

With the addition of a Keypad Control Center (KCC), Model #6099, you can turn Corby Data Chip Readers into a multi-face ted and very sophisticated Digital Access System.

It's low cost design allows connection to almost any kind of serial or parallel printer. All user information can be programmed with a low cost Keypad, a Video Display Terminal, or any Personal Computer that has a Terminal Software Package installed.

HOW THE KCC WORKS

After touching a valid chip the KCC willprint: Reader used, Time and Date, CODE OK or the Users Name, and the User Number. If an unprogrammed Data Chip is touched to the reader the CPI will print: C ODE ER.

The amount of zero's which precede the user number is determined by the set-up on the CPI.

Here's a sample printout using a five (5) digit length:

02 11:20 05/26 CODE OK 00002
04 11:44 05/26 CODE OK 00016
16 12:07 05/26 CODE OK 00099

or... if using names

05 14:12 05/26 TOM SMITH   00004
11 15:32 05/26 CARL BENNER   00007
13 17:40 05/26 UNLIMITED   00099

VERY IMPORTANT!

When touching a Data Chip to the reader... be sure the side of the Chip is touching the inside rim of the reader, and the center of the Chip is touching the center of the reader.


Contact MUST be made with both the center and the inside rim of the reader.
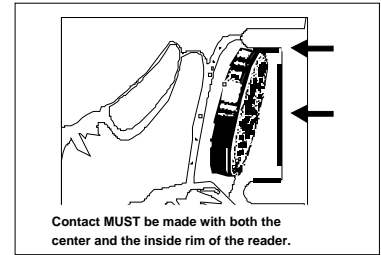
While programming the unit and doing a Touch and Hold Sequence DO NOT slide the Master Chip around! You must apply constant pressure to ensure the outer edge of the chip is in continuous contact with the inside rim of the Reader. If contact between the Master Chip and reader is "broken" the sequence will abort.

CAUTION !!!

If you use this unit to operate a DC door strike, magnetic lock, relay, or any device that has a coil (inductive load) powered from a DC source, you must install a diode in parallel across the coil terminals. Use a Corby 1N4002 or Radio Shack # 276-1102. This diode is supplied with each Data Chip System.

Connect the stripe side of the diode to the coil terminal that becomes positive. Connect the unmarked end of the diode to the negative side of the coil.

DC Coil
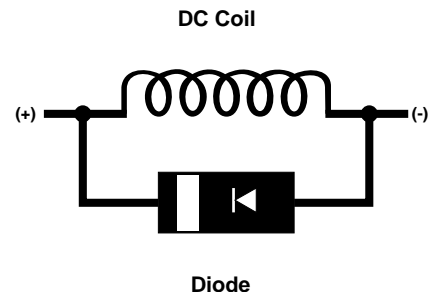
Diode

Proper installation of this diode will prevent the high voltage spike that occurs when a coil is de-energized. If you do not use this diode, you may have experimental results and/or damage the Data Chip System.

STATIC PROTECTION

The static grounding strap included with this unit must be used. This strap consists of a ring terminal, disc capacitor, and black wire. Connect one end of the strap to the negative ( ) power supply and connect the ring terminal to one of the screws between the plate and the wall. If using a reader without a plate, the grounding strap is not necessary.

WARNING

This unit normally requires a constant voltage source using a battery backed up power supply for proper relay operation.

During some programmi ng sequences and during power up sequence, the relay may operate without prior warning. If this unit is connected to industrial machinery or some garage doors, injury could occur.

If this unit is configured for latching operation and power is lost to the unit, the relay will return to its last known position upon re-application of power. Therefore, it is recommended that this relay be wired in a fail safe configuration.

It is the responsibility of the installer to ensure final connections are no t made until the unit is fully programmed and operating in a safe manner.

SPECIFICATIONS

Input Voltage: 9-14 VDC Only
Power: 20mA idle, 120mA max
Relay : Miniature Form C, Dry Contacts rated at 5 Amps and 30VDC.
LED Driver : Open collector, NPN transistor switches negative ( ) upon activation. Can sink up to 50mA maximum.
CPI Output : NPN transistor, pulse train. Software format is available.
Memory : EEPROM
Operating Temp : 18C - 55C (0F-131F)
Dimensions in inches: (H X W X D)
Mullion plate: 3.125" X 1.375" X 1.00"
Single gang plate: 4.5" X 2.75" X 1.00"
Circuit board: 2.5" X 1.6" X 1.25"

WIRE CONNECTIONS

Black ( ) negative 12VDC supply voltage input. Also connects to the Black wire on the Data Chip Reader.

Red (+) positive supply voltage input. This voltage should be uninterrupted and able to supply a minimum of 120mA for the circuit board, and 20mA for each LED.

Orange is the Request To Exit (RTE) input trigger. When this wire is momentarily connected to the negative ( ) supply voltage input, the relay will activate.

Yellow is the LED Driver. This output is capable of switching negative up to 50mA. Connect to the Yellow wire of the LED(s) (Models 4340-4343).

Connect the Yellow wire to the Brown wire (Models 4307/4308).

Grey is the Reader Input Wire. Connect to the Grey wire on the Data Chip Reader.

Brown is the Printer Data Output. Connect to the desired channel input (2-16) on the optional Model #6099 Corby Printer Interface (CPI). Note: A common negative ( ) wire is needed between the CPI and the Model #4345 circuit board black wire.

White is the common relay contact.
Green is the Normally Open relay contact.
Blue is the Normally Closed relay contact.

BUZZER/SPEAKER:

Black connects with the Yellow LED wire and/or the Yellow ( ) LED Driver wire on the circuit board.

Red connects with the Red LED wire and/or the Red wire of the circuit board which is the (+) positive VDC supply voltage input.
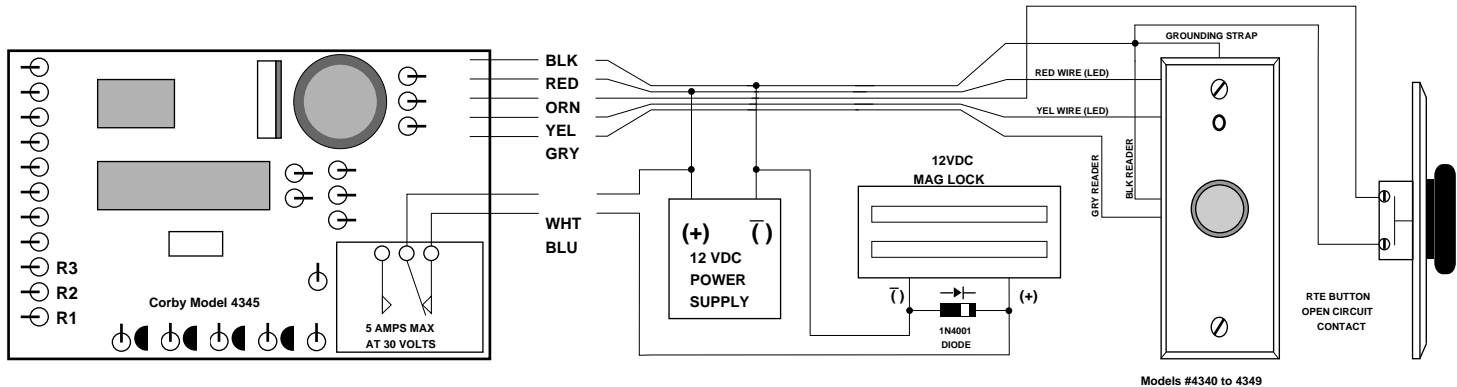
USER WORKSHEET

To enable you to accurately delete User Chips from this System at a later date, a written record should be kept of all active User Chips by name and their respective memory slot.

0 _____
1 _____
2 _____
3 _____
4 _____
5 _____
6 _____
7 _____
8 _____
9 _____
10 _____
11 _____
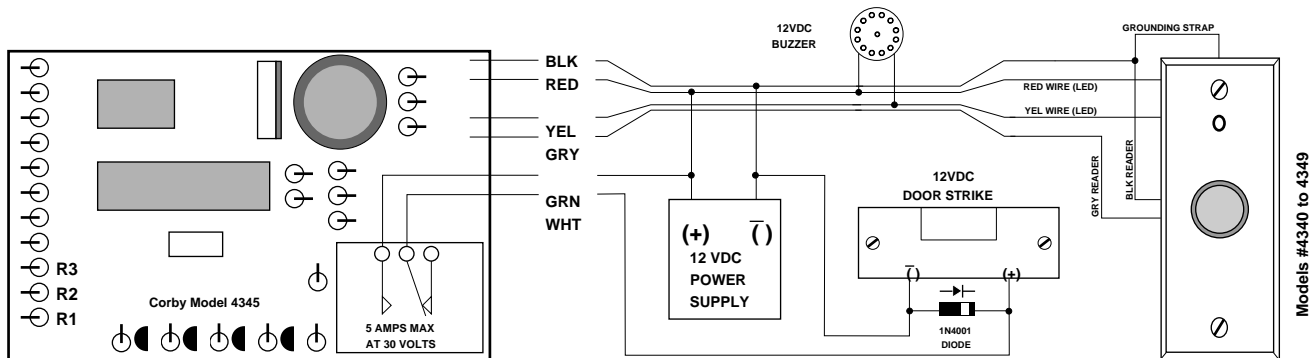12 _____
13 _____
14 _____
15 _____
16 _____

If you want to know more about Corby products, or download thousands of programs, you can use a PC and modem to access our Bulletin Board System (BBS). The BBS can be accessed 24hrs. seven days a week by dialing (610) 433-3370.

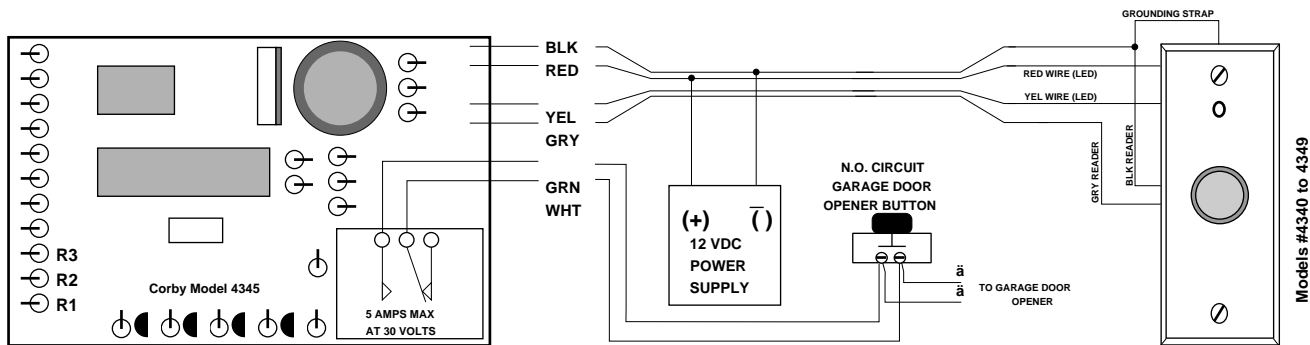We use a USRobotics Dual 14.4 modem. Set your modem for 8N1.

FIG. 1 12 VOLT (DC) MAGNETIC LOCK WITH REQUEST TO EXIT BUTTON (RTE)

BLK
RED
ORN
YEL
GRY

WHT
BLU

R3
R2
R1

Corby Model 4345

5 AMPS MAX
AT 30 VOLTS

GROUNDING STRAP

RED WIRE (LED)
YEL WIRE (LED)

GRY READER
BLK READER

12VDC
MAG LOCK

(+) ( )
12 VDC POWER SUPPLY

( ) (+)

1N4001
DIODE

RTE BUTTON
OPEN CIRCUIT
CONTACT

Models #4340 to 4349

FIG. 2 ACTIVATING A 12 VOLT (DC) DOOR STRIKE AND A 12VDC BUZZER

BLK
RED

YEL
GRY

GRN
WHT

R3
R2
R1

Corby Model 4345

5 AMPS MAX
AT 30 VOLTS

12VDC
BUZZER

GROUNDING STRAP

RED WIRE (LED)
YEL WIRE (LED)

GRY READER
BLK READER

12VDC
DOOR STRIKE

(+) ( )
12 VDC POWER SUPPLY

( ) (+)

1N4001
DIODE

Models #4340 to 4349

FIG. 3 OPENING AN ELECTRIC GARAGE DOOR

BLK
RED

YEL
GRY

GRN
WHT

R3
R2
R1

Corby Model 4345

5 AMPS MAX
AT 30 VOLTS

GROUNDING STRAP

RED WIRE (LED)
YEL WIRE (LED)

GRY READER
BLK READER

N.O. CIRCUIT
GARAGE DOOR
OPENER BUTTON

(+) ( )
12 VDC POWER SUPPLY

TO GARAGE DOOR
OPENER

Models #4340 to 4349

FIG. 4 SHUNTING MAGNETIC CONTACT #1 IN AN ALARM LOOP (LATCHING RELAY)

BLK
RED

YEL
GRY

GRN
WHT

R3
R2
Cut Resistor R1
R1

5 AMPS MAX
AT 30 VOLTS

GROUNDING STRAP

RED WIRE (LED)
YEL WIRE (LED)

GRY READER
BLK READER

1   2

(+) ( )
12 VDC POWER SUPPLY

TO
ALARM PANEL
CLOSED CIRCUIT
LOOP

Models #4340 to 4349