- Secondary Code
- Built-In Tamper
- Dual Button Panic
- Duress Feature
- 3 Indicator Lights
- Bypass Zones
- Optional Outdoor Model
- Optional 6VDC Model

CUT OUT

Arrowhead ↗

DCU-20
Programmable Digital Remote Control

OPERATION AND INSTALLATION MANUAL

DCU-20 SPECIFICATIONS

INPUT VOLTAGE: 10 to 18 VDC

POWER: 25 mA maximum

ARM OUTPUTS: 2 solid-state switches, ARM-1 150 mA max, ARM-2 75 mA max

ARM OUTPUT TIMINGS: .1, 10, 25, 35 seconds or latching

ZONE/DURESS OUTPUT: 75 mA max: ZONE keyboard switchable, DURESS momentary 1 sec

INDICATORS: ARMED LED Red, current limited, 820 Ohm resistor (provided on PC board): READY LED Green, current limited, 820 Ohm resistor (provided on PC board): ZONE LED Amber, also indicates Duress

TAMPER SWITCH: Built-in, N.O. or N.C.

PANIC: Simultaneously Press Dual-button "*" keys

MASTER CODE: 4 digit with repeating digits 9,000 possible codes, jumper selectable

AUXILIARY CODE: 4 digit with repeating digits 8,999 additional possible codes, user keyboard programmable

FUNCTION CODE: Selectable zone or duress, jumper selectable

WRONG CODE LOCKOUT: 31 consecutive key depressions without a valid code & without exceeding interdigit time causes a 30 second lockout period

INTERDIGIT TIME: 2½ seconds (max. time between keystrokes)

KEYPAD: 12 keys 0 through 9, "*" and "*"

OPERATING TEMPERATURE: 32°F to 131°F, 0°C to 55°C

CASE MATERIAL: ABS plastic

MOUNTING: Surface

SIZE: 3¼" W x 4½" H x 1" D

WEIGHT: Approximately 6 ounces

COLOR: Fog grey

P N 102-000022   AW 70-09790

DCU-20 USER GUIDE

KEEP THIS EASY REFERENCE USER OPERATION GUIDE IN A SAFE PLACE.

1. **MASTER CODE:**

2. **INSTALLER:**

   PHONE NO. ____

3. **CENTRAL STATION NO.** ____

4. **ACCOUNT CODE:** ____

5. **TO PROGRAM AN AUXILIARY CODE:** Enter 00, Master code, 00 & desired 4 digit Auxiliary code. (e.g. For Master code of 2022, enter 00 2022 00 ____)

6. **TO INITIATE PANIC:** Depress both "*" keys simultaneously.

7. **TO SEND DURESS SIGNAL:** (If available) Add 1 to the last digit of Master or Auxiliary code (e.g. enter 2023 for a code of 2022)

8. **TO "ADD" OR "DELETE" ZONE OF PROTECTION:** Add 0 before Master or Auxiliary code. (e.g. 0 2022)

9. **TO "ADD" OR "DELETE" ZONE WITHOUT AFFECTING STATUS OF SYSTEM:** Enter 0, Master or Auxiliary code, and an additional 0 within 1½ seconds of last digit. (e.g. 0 2022 0)

10. **WRONG CODE LOCKOUT:** If 31 key depressions are entered without a valid code, the system will lockout for a period of 30 seconds. Any digit entered during this lockout period will extend the lockout period to the initial 30 seconds.

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1. DESCRIPTION

The DCU-20 is a programmable, digital remote control station for use in the arming and disarming of alarm panels or as an access control device. Utilizing the latest state-of-the-art microprocessor technology, the DCU-20 offers greater user versatility with programmable master and auxiliary codes, zone shunting or duress, selectable outputs, dual panic buttons, tamper switch and three indicator LEDs.

2. OPERATION

MASTER CODE:

The DCU-20 offers a 4-digit jumper programmable Master code with repeating digits allowing 9,000 possible different codes. (For further information, please refer to the Programming Section located on inside pages.)

AUXILIARY CODE:

The Auxiliary code is also a 4-digit programmable code using repeating digits which allows 8,999 possible different codes. This feature enables the user to program individual codes for special uses such as baby-sitters, maids, janitors, etc. (For further information, please refer to the Programming Section located on inside pages.)

DURESS FEATURE:

The DCU-20 provides a duress signal output (silent alarm) when the last digit of the Master or Auxiliary code is incremented by one digit (i.e. adding +1 to the last digit, 2022 becomes 2023.)* The duress feature is selected by the function jumper located on the printed circuit board.

Entering a duress code outputs an arming/disarming pulse, followed 2½ seconds later by a pulse from the duress output. For example, if the master code is 2022 and 2023 is entered at the keyboard, the arm/disarm pulse will output followed 2½ seconds later by a duress pulse of 1 second length. This output is a momentary closure to ground. The amber LED will flash once to indicate transmission of the duress pulse. During the 2½ seconds between the arm/disarm pulse and the duress pulse, the keypad will not accept any other key inputs. (For further information on selection of this feature, please refer to inside pages.)

*Only the last digit is incremented by one digit, i.e. 2029 would become 2020.

2. OPERATION (Continued)

ZONE OPERATION:

The DCU-20 has the capability to add or delete (zone) an area of protection in the security system installation. The zone feature is selected by the function jumper located on the printed circuit board. If the zone feature is selected, adding or deleting the zone is accomplished by entering a "0" before entering the Master or Auxiliary code. This process will change the state of the zone as well as output the arm/disarm pulse. To add or delete the zone without arming or disarming the system, press the "0" key, a valid code and "0" again within 1¼ seconds. For example, with a master code of 2022, to change the zone status without outputting an arm/disarm pulse, use the following sequence "0", 2022, "0".

NOTE: SELECT ONLY ONE FEATURE; ZONE OR DURESS. THE DCU-20 WILL NOT ACCOMMODATE BOTH FEATURES SIMULTANEOUSLY.

PANIC OPERATION:

A panic alarm signal is initiated by depressing both the "∗" keys simultaneously. Example: "∗" and "∗"

TAMPER ALARM:

If the tamper circuit is used, removing the unit from its mounted position will cause a tamper alarm. The tamper can be used as a "normally open" or a "normally closed" contact. The DCU-20 is shipped from the factory in the "normally open" configuration. (For further information on wiring, please refer to inside pages.)

LED INDICATORS:

Three LED indicators are provided on the DCU-20 for displaying the Armed, Ready and Zone/Duress status. Specific functions of these indicators will differ with various control panels. The Armed and Ready LEDs are controlled by the control panel and will indicate its status accordingly. The Zone/Duress LED is controlled by the DCU-20 and will indicate the state of the zone function. In Duress applications, the LED will flash on for one second, indicating a Duress pulse output.

"ARMED" LED (RED):

Indicates Arm status and is panel controlled. Normally, this LED will be lit when the system is armed and off when disarmed. Depending on the control panel used, this LED may also blink on an intrusion and is current limited by a 820 Ohm resistor in the DCU-20. No external current limiting is required. Two wires are provided for external control hookup.

"READY" LED (GREEN):

Indicates the system Loop status and is also panel controlled. This LED is usually lit when all conditions are met for safe loop status and off when a loop is violated. This LED is current limited by a 820 Ohm resistor in the DCU-20. No external current limiting is required. Two wires are provided for external control hookup.

"ZONE" (DURESS) LED (AMBER):

Indicates zone or duress status. This LED is controlled by the DCU-20 and will be lit when the zone output is active (transistor switch closure to ground (−).) This LED will also flash for one second when a duress signal is initiated, if the duress feature has been selected.

WRONG CODE LOCKOUT:

A lock-out feature has been incorporated into the DCU-20 design to prevent unauthorized access or accidental activation. Each digit must be entered within 2½ seconds of the previous digit. Failing to do so will cause the DCU-20 to reset, cancelling any previous entries. If a wrong code is entered, wait 5 seconds and reenter a valid code. Thirty one or more key depressions, without a valid code and within the allowable interdigit time, will result in a lockout condition for 30 seconds. During this lock-out period, pressing any digit will reset the lock-out period to the full 30 seconds. YOU MUST WAIT 30 SECONDS BEFORE ATTEMPTING ANY KEYBOARD ENTRIES AFTER THE LOCK-OUT FEATURE HAS BEEN STARTED.

3. PROGRAMMING

FUNCTION CODE JUMPER:

The "Function" jumper selects one of the two possible operating modes: Zone or Duress, as well as the desired arm pulse closure time as indicated in TABLE A. The "Zone" feature is selected by jumpering to even digits, and the "Duress" feature is selected by odd digits.

3. PROGRAMMING (Continued)

Any one of 10 possible function mode combinations, as shown in TABLE A, is selected by inserting a jumper between the "F" position and the correct digit 1-0 position. Please refer to Figure 1 which illustrates the function jumper selected in the "0" digit socket which provides for Zone Operation with an arm time of ½ second.

TABLE A: Function/Time Selections

JUMPER	FUNCTION	ARM TIME
1	Duress	½ second
2	Zone	10 seconds
3	Duress	10 seconds
4	Zone	25 seconds
5	Duress	25 seconds
6	Zone	35 seconds
7	Duress	35 seconds
8	Zone	Latch (shunt panels)
9	Duress	Toggle/Latch (shunt panels)
0	Zone	½ second

HOW TO PROGRAM THE MASTER CODE:

Programming of the Master code is accomplished by placing the four Code/Key jumpers into the desired sockets labeled CODE and KEY on the printed circuit board. DO NOT FLEX JUMPER WIRES EXCESSIVELY. Insert jumpers in the sockets from left to right. Be certain each jumper is pressed securely into place and all four jumper wires are installed. Only 1 jumper wire may be placed into each socket. NOTE: ZERO CANNOT BE USED AS THE FIRST DIGIT OF THE MASTER OR AUXILIARY CODE. Repeating digits are allowed and are accomplished by placing the jumper wire in the top right "Same As" socket as illustrated in Figure 1.

Figure 1 illustrates the proper function jumper placement for programming of the zone feature with ½ second arming and a Master code of 2022. The function jumper is placed into the 0 socket (zone with ½ second arming). The first digit jumper is placed in the 2 socket. The second digit desired is a 0 (a repeated digit) and therefore is placed in the "Same As" socket indicating that the second digit in the Master code is the "Same As" the digit previously selected for the function code (0). The third and fourth digit jumpers (repeated digits) are also placed in the "Same As" sockets indicating the third and fourth digits in the Master code are the "Same As" the first digit (2).
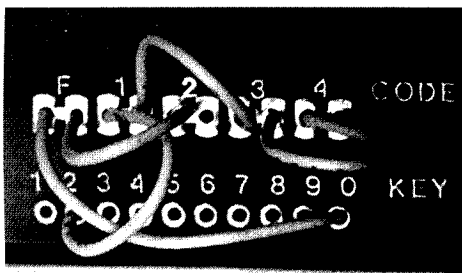

FIGURE 1
Jumper wiring for Zone selection, ½ second arming and a Master Code of 2022.
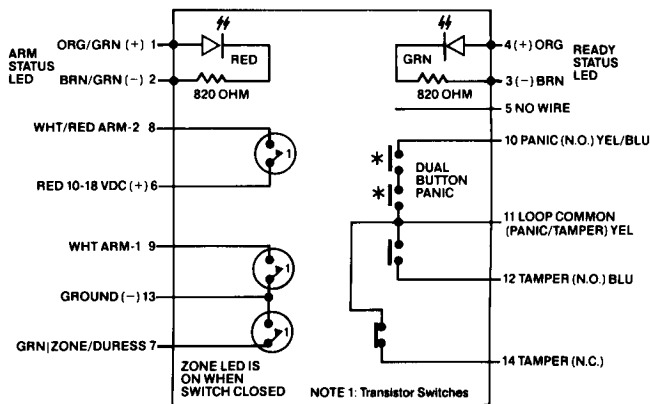

FIGURE 2: Functions of the DCU-20
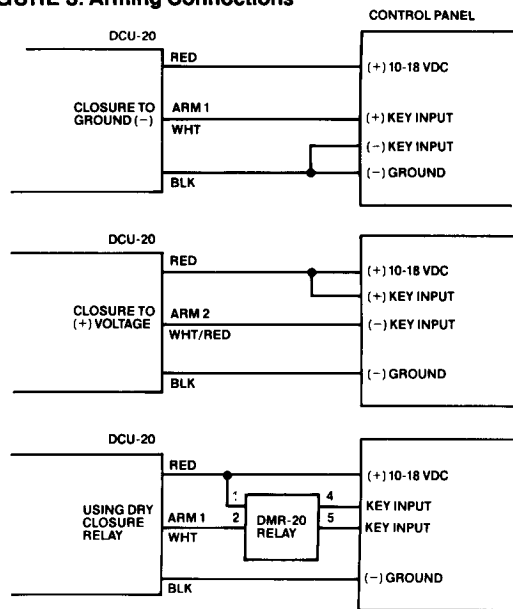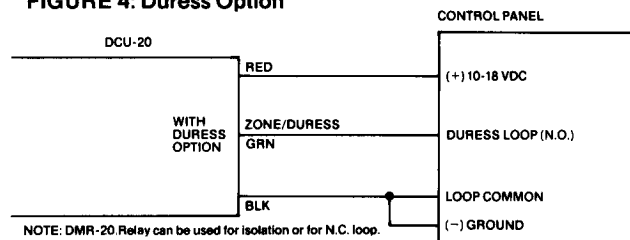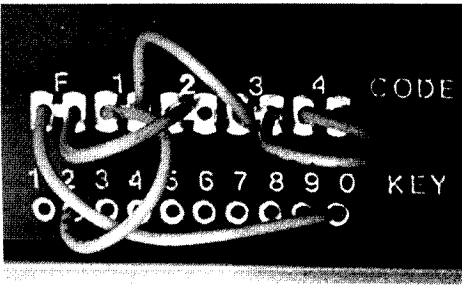

FIGURE 3: Arming Connections

FIGURE 4: Duress Option

FIGURE 1
Jumper wiring for Zone selection, ½ second arming and a Master Code of 2022.

HOW TO PROGRAM THE AUXILIARY CODE:

To enter an Auxiliary code, use the following sequence at the keyboard: Depress the "0" key twice, enter the Master code, depress the "0" key twice again, followed by the desired 4-digit Auxiliary code. NOTE: "0" CANNOT BE USED AS THE FIRST DIGIT OF THE AUXILIARY CODE. Programming of the Auxiliary code must be accomplished with power applied. LOSS OF POWER WILL ERASE THE AUXILIARY CODE AND REPROGRAMMING WILL BE REQUIRED ONCE POWER IS RESTORED. For example, to program an Auxiliary code of 1234, the correct programming sequence is as follows for a Master code of 2022: "00" "2022" "00" "1234"

To change an Auxiliary code, follow the programming sequence above. Entering the new Auxiliary code automatically erases the previous code. To clear an Auxiliary code without entering a new Auxiliary code, follow the above programming sequence omitting the last step and waiting 5 seconds. The existing Auxiliary code will automatically be erased.

4. WIRING CONNECTIONS:

The DCU-20 has twelve hook-up wires which are color coded to simplify installation.

PIN	WIRE	DESIGNATION
6	RED	Voltage Input (+) 10-18 VDC
13	BLACK	Ground (−)
9	WHITE	Arm-1
8	WHITE/RED	Arm-2
7	GREEN	Zone/Duress
10	YELLOW/BLUE	Panic (N.O.)
11	YELLOW	Loop Common (Panic + Tamper)
14	BLUE	Tamper N.C. (on wall)
12	BLUE	Tamper N.O. (on wall)
4	ORANGE	Green (Ready Status) LED (+)
3	BROWN	Green (Ready Status) LED (−)
1	ORANGE/GREEN	Red (Arm Status) LED (+)
2	BROWN/GREEN	Red (Arm Status) LED (−)

NOTE: Pin 5 is the key plug and is used to align the cable connector to ensure a proper connection. The twelve wires described above terminate in a 14 pin connector pluggable into a male right angle connector located on the circuit board. Any contact is removable by pressing down on its locking tab and pulling back gently on the soldered or crimped wire.

"N.O./N.C." TAMPER:

A "normally-open" or "normally-closed" tamper is available. The DCU-20 is shipped with a N.O. tamper as standard. To convert to a N.C. tamper, remove the blue wire from connector pin #12 and insert it into connector pin #14.
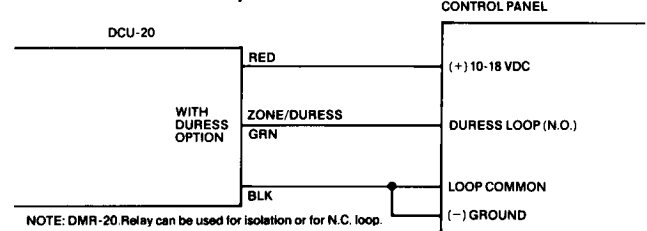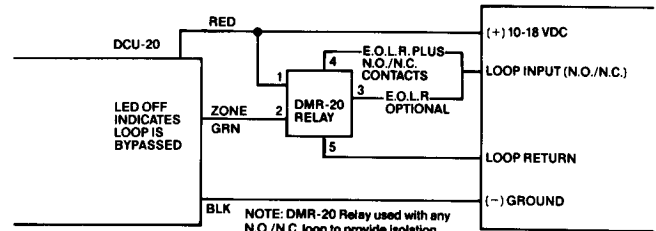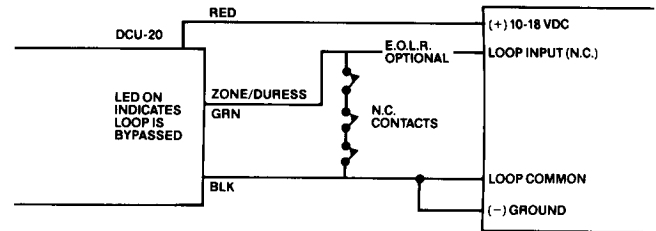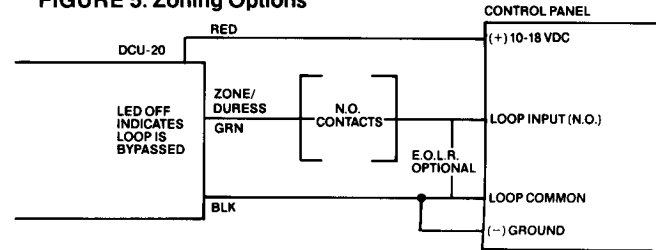

FIGURE 4: Duress Option

NOTE: DMR-20 Relay can be used for isolation or for N.C. loop.

FIGURE 5: Zoning Options

NOTE: DMR-20 Relay used with any N.O./N.C. loop to provide isolation.

ARM/DISARM OUTPUTS:

Two Arming outputs are provided in the DCU-20 to allow use with control panel key inputs that must be either returned to ground (common) or returned to a positive voltage. Each of these outputs is a transistor switch closure that can be operated in either a "momentary" or "latched" mode, depending upon the function code specified. Normal "momentary" operation is a "one-half" second closure, although times of 10, 25, and 35 seconds are also available for access control applications in conjunction with a door strike.

When the DCU-20 is being used for access control, a DMR-12 relay module must be used which contains a set of dry contacts for heavier current carrying capacity. The DMR-20 Relay is also used in control panel applications requiring a dry contact closure and provides additional current capacity up to a maximum of 500mA. Complete electrical isolation is also achieved between the arming station and the control panel arming input through the use of this relay module.

The Arm-1 output is used when the control panel arming input is a key switch closure to ground (0 volts). The Arm-2 output is used when the key closure is to the positive (auxiliary power) voltage. Exceeding the current limitations of 75 mA on Zone/Duress and Arm-2 and 150 mA on Arm-1 will render the DCU-20 inoperable and possibly damage the unit.