KP200

INTELLIGENT KEYPAD

V3

NEATROL SYSTEMS

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1.1 Summary of Master KP200 Functions.

The KP200 master is used to centrally program a maximum of 32 KP200 slave units, each of the slave KP200's are connected via a single pair shielded cable back to the master.

The KP200 master has a program mode, to gain access to the program mode the current master code must be entered in correctly, then program changes can be made.

En	Description
00 MMMM MMMM #	Program master code in master.
00 MMMM MMMM UU #	Master code.
01 CCCC UU #	User code.
49 SSSS UU #	Supervisor code.
51 TT UU #	Program access time in slave.
52 PPPP UU #	Program system parameters in slave.
69	Fire Comms Fail Extension
90	Diagnostic mode.
99	Exit Program mode.

The current master code must be entered to gain access to the program mode, then the required functions may be programmed. Once program changes have been made, enter **99** to exit the program mode and secure the system from unauthorised change.

23350743	(Enter program mode)
00, 87654321, 00, #	(Changes all slave's master code to 87654321)
01, 4321, 00 #	(Changes user code to 4321)
99	(Exit program mode)

1.2 Explanation of master codes :

MMMM MMMM	=	8 digit master code.
CCCC	=	4 digit user code.
SSSS	=	4 digit supervisor code.
TT	=	2 digit access time (01-99)
PPPP	=	4 digit code when P = 0 or 1
UU	=	2 digit slave address (Valid address range between 01-32, with functions allowing a global address of 00).
#	=	The # key on the keypad. This key must be pressed as the last key in the Function sequence so the system will accept the function, if any other key is pressed in it place the then function will be aborted and no change will occur.

Note : In the examples used throughout the manual the factory master code of 23350743 is used, if you have changed the master code then substitute the factory code with your master code.

1.3 Summary of Slave Functions.

The KP200 has 48 user codes with either a 4 or 6 digit user code, (in the 6 digit mode the user number prefixes the users code eg 01 1234) and will operate as a stand alone keypad, online remotely programmed via a KP200 master or a Personal Computer.

The following is a summarised list of the function codes that can be used to program or re-program the Slave KP200 Intelligent Keypad.

The Current MASTER CODE must be entered prior each of these Functions.

En	Description
00 MMMM MMMM #	Master code.
01 CCCC #	User code 01.
02 CCCC #	User code 02
. . .	. . .
. . .	. . .
48 CCCC #	User code 48
49 CCCC #	Supervisor code.
50 1 #	Clear all user and supervisor codes.
51 TT #	Access time.
52 PPPP #	System parameters.
53 UU #	Slave address.
54 R#	Slave communications mode.

The current master code must be entered prior to each of these functions, as an example to the factory master code and user codes the following keys would be entered,

23350743, 00, 87654321 # (Changes master code to 87654321)

87654321, 01, 4321 # (Changes user code to 4321)

1.4 Explanation of slave codes :

mmmm mmmm = Current master code.

cccc = Current user code.

MMMM MMMM = New 8 digit master code.

CCCC = New 4 digit user code.

SSSS = 4 digit supervisor code.

TT = 2 digit access time (01-99)

PPPP = 4 digit code when P = 0 or 1

UU = 2 digit slave address (Valid address range between 01-32).

R = 1 digit 0 or 1 to set the comms mode.

= The # key on the keypad. This key must be pressed as the last key in the Function sequence so the system will accept the function, if any other key is pressed in it place the then function will be aborted and no change will occur.

2.1 Setting up the system.

Once the system has been installed and checked the system can be powered up, the KP200 will beep when power is first applied. After this occurs if the factory set user code of 1234 is entered the output relay will open for 5 seconds and a second long acknowledge beep will be heard.

If the KP200 is connected to a KP200 master or PC (personal computer) the Slave address Fn 53 and the Slave mode Fn 54 must be programmed, once these two functions have been set then all other functions can be remotely programmed Via the Master.

If the KP200 is used in a stand alone application we recommend that the master code and user code be reprogrammed, as theses two codes are the same in all KP200's units when they are shipped.

Note : Other functions such as the Access time Fn 51 and System parameters Fn 52 may need to be changed to customise the KP200 to your installation.

2.2 Using the KP200 slave.

To access the system just enter in your four digit user code, the KP200 will acknowledge a correctly entered user code with a 1 second long beep, if an incorrect code is entered then the KP200 will beep on and off for 2 seconds, with this error time increasing for every incorrect code entry.

To program the KP200 the current eight digit master code must be entered 23350743 (factory master code), the KP200 will acknowledge a correctly entered master code by beeping 3 times for half a second each, at this point the required function code (Fn) must be entered. As an example we will enter in 01 to change the user code, now the required digits for the selected function in the example 4321, the # key must now be pressed to save the new code (if any other key is pressed the KP200 will not accept the change). This example has just changed the user code to 4321.

Note : When the function code is to be entered only valid function number will be accepted, if any other numbers are entered the system will then beep in error and the process started again by entering in the master code.

2.2 Using the KP200 Master.

The KP200 master is used solely for the purpose of remotely programming KP200 Slave units and requires no special set procedures apart from the connection of 12vdc and the communications cable.

To program a remote KP200 slave unit, firstly the current KP200M master code must be entered, once this code has been entered correctly the KP200M will stay in the Program mode until Fn 99 is entered, at which time the program mode will be cancelled to inhibit un-authorised use of the system.

While in the program mode we can change the user code of a remote KP200S in the following manner, enter 01 to program user code, then the new four digit user code 4321, then the address of the slave to change 01, to change slave number 1 then the # key to save the change.

Most of the other functions of the KP200 Slave are remotely programmable in the same manner, refer to the KP200M summary of functions.

Note : If 00 is used as the Slave address then all slaves will receive the same codes.
:Do not forget to enter Fn 99 at the end of your programming session to exit the program mode and secure the KP200 system from un-authorised change.

3.1 Pgm Master code Fn 00.

Function format mmmm mmmm 00 MMMM MMMM #

The master code gives you the facility to program the system, all KP200's units are shipped with the same master code, to increase the security of your installation this code should be reprogrammed.

Eg : 23350743, 00, 87654321 # *will change the master code to 87654321.*

3.2 Pgm User code Fn 01.

Function format mmmm mmmm 01 CCCC #

The user code is a four digit code which is used on a daily basis to access the system.

When the user code is correctly entered by its self the output relay will activate along with the audible beep.

Eg : 23350743 01 4321 # *will change the user code to 4321.*

3.3 Pgm Supervisor code Fn 49.

Function format mmmm mmmm 49 SSSS #

The supervisor code is a 4 digit code which can be used by supervisor type personal, to enable or disable options on the KP200 pertaining to daily use.

Eg : 23350743, 49, 9999 #*will set the supervisor code to 9999.*

3.4 Pgm Clear codes Fn 50.

Function format mmmm mmmm 50 1 #

This functions can be used to clear both the user and supervisor codes to an un-accessible state. (ie no code can be entered through the keypad to operate the output relay).

Eg : 23350743 50 1 # *will clear both the user and supervisor codes.*

3.5 Pgm Access time Fn 51.

Function format 23350743 51 TT # (Where TT is the time)

The access time defines the period in seconds for which the output relay operates if programmed to operate in the Timed mode. This time ranges from 01 and 99 seconds.

Eg : 23350743 51 10 # *will set the access time to 10 seconds.*

3.6 Pgm System parameters En 52.

Function format 23350743 52 PPPP # (Where PPPP is the selected system parameters)

PPPP

0 = 4 Digit user code.
1 = 6 Digit user code.

0 = Duress code enabled / Shunt mode disabled.
1 = Duress code disabled / Shunt mode enabled.

0 = Timed relay output.
1 = Toggle relay output.

0 = Normally closed relay contacts.
1 = Normally open relay contacts.

EG : 23350743 52 1000 # *will change the system to a normally open relay contact.*

3.7 Pgm Slave address En 53.

Function format mmmmmmmm 53 UU # (Where UU is the Address)

The Slave address must be programmed if the KP200 Slave is to be remotely programmed Via the master KP200 or PC (Personal Computer). The factory setting for the slave address is 00 which means it will not respond to any remote programming functions. Valid addresses range between 01 and 32, the system will reject addresses greater than 32 and beep in error.
Each slave should have a unique address in the system, however slaves may share a common address. All slaves sharing a common address will have the same codes (master, user, etc) if remotely programmed, where as slaves with unique addressing can have unique codes if required.

Eg : 23350743 53 08 # *will change the slave address to 08*.

3.8 Pgm Slave mode En 54.

Function format mmmmmmmm 54 R # (Where R is the mode)

If remote programming is used, then the Com's mode should be programmed to suit the specific requirements. Two comm's modes are supported:

Mode **0** is used for those slave that share a common address with other slaves.

Mode **1** is used for slaves with unique address.

If any other mode is entered then the system will beep in error.

Eg : 23350743 54 1 # *will change to com's mode 1 (Unique).*

3.9 Pgm Shunt time En 55.

Function format 23350743 55 TT # (Where TT is the time)

The shunt time defines the period in seconds for which the shunt output operates. This time ranges from 01 and 99 seconds.
(See § 3.6 System parameters.)

Eg : 23350743 55 10 # *will set the shunt time to 10 seconds.*

4.0 Restore to Factory setting's

There is a small connector J1 on the KP200 PCB, if the two Pins of this connector are shorted for 1 second, then the KP200 will restore to factory set codes. If the system is powered down and up again before the codes are reprogrammed then the user defined codes will be restored on power up.

En	Description	Factory codes
00	Master	23350743
01	User code 01	1234
02	User code 02	----
.	. .	. .
.	. .	. .
48	User code 48	----
49	Supervisor	----
51	Access time	05
52	System parameters	1010
53	Node address	00
54	Comms mode	0

4.1 Connection Details.

There are eight screw terminals provided by the KP200 they are as follows:

Terminal	Description.
0V DC	Negative input for the 12v dc supply
12V DC	Positive input for the 12v dc supply
Alm cct	Monitored door circuit. (10K EOLR in series with a N/C door to 0v)
Aux Open	Door egress button. (N/O button to 0V)
Dur	Duress output. (Open collector transistor output, with the transistor turning off when the duress code is entered.)
0V	0V connection for the above three terminals.
NC OP	Normally closed relay output from the KP200
COM OP	" " " " " "

NOTE: A reverse biased diode MUST be placed across any inductive load (eg. door strike) that is driven using the relay output. Failure to do this will result in the unit malfunctioning, possibly leading to permanent damage.

There is also a 4 way Molex connector provided for the RS-485 communications buss.

Terminal	Description
A	RS-485 conductor A
B	RS-485 conductor B
-	Not used
GND	0v Reference

When connections are made to this connector all KP200's must have there A terminal connected to their A terminal, B to B and GND to GND. The KP200's should be connected in a Daisy chain fashion with the start and end of the cable terminated with 120R resistors.

We recommend using Beldon shielded cable (Part No 8132)

5.0 KP 200E Fire Protection Option

An optional facility has been included to allow a KP200 network to be used as a fire protection system. This allows the KP200 master to be connected to a fire alarm panel via dry relay contacts provided by or derived from the panel, which is wired in series with a 10K EOL resistor to the alarm circuit of the master. The system is configured so as to be inherently fail-safe in its operation. Within one second of a fire being indicated at the master, all slave units are compelled to open their doors. Once to doors have been told to open, they will remain open until reset by either powering down each unit or by entering a valid user code, providing the original fire alarm has been reset. Should any of the slaves loose comms with the master, they will assume the lack of comms is fire induced and will then open their doors within 15 seconds of comms absence. While slave user codes and other parameters are being programmed from the master, comms is temporarily disabled. To avoid causing all slave to open their doors, FN 69 can be used at the master. This sends all slaves a Fire Comms Fail Extension message which causes the slaves to wait for 4 minutes and 15 seconds before assuming comms failure has occurred due to fire. This message is sent by first entering the master code followed by 69. Should more than 4 minutes be required to fully program the system, FN 69 can be used as many times as required to refresh the 4 min 15 sec timer at all slaves. At the conclusion of any programming, FN 99 must be used to restore the master to a secure state and also allow it to poll the slaves. Should this not be done, the slaves will interpret the master's lack of polling as a fire and thus open their doors.