How to Setup Auxiliary Key Functionality using Canned and Custom M-codes

Create a Custom M-code and Map it to an Auxiliary Key

Common Uses:
1.) Set X and Y zero position with one button push
2.) Move XYZ or XY to a predetermined position.
3.) Turn on or off an output to control anything that you would control with an output, lights, dust collection, lube pump shot, vac hold down..etc..etc..

Three easy steps.

1.) Create a G&M code program that you want to run when an Auxiliary key is pressed.
2.) Save it as a Custom M-code using the proper custom M-code name
3.) Map the new Custom M-code to a spare Auxiliary key using Auxiliary key parameters.

Example: Open any text editor and create the G&M program you would like to execute when pressing an Aux key. For this example we will 'program' Aux key #5.

For this example we will be creating a custom M-code program to move the X and Y axis to X0.0000 Y0.0000 position by pressing Aux key 5.   Open editor and create a program with G0 X0 Y0 as the first line
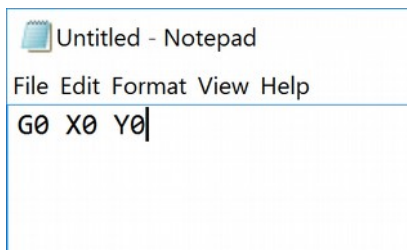
2.) Save this G&M code program with the file name   mfunc72.mac, save in the /cncm directory.
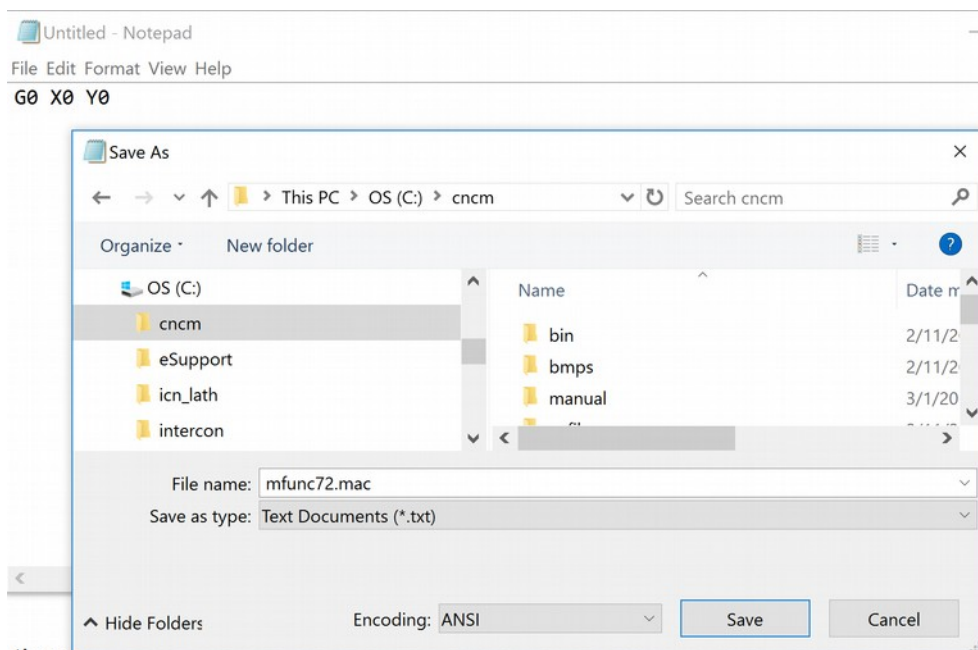
3.) Map the custom M code to an Auxiliary key. F1 Setup, F3 Config, F3 parameters. Navigate to P192. Set P192 to 7211, press F10 to save.

167	0.0000	187	0.0000
168	0.0000	188	0.0000
169	0.0000	189	0.0000
170	0.0000	190	0.0000
171	0.0000	191	0.0000
172	0.0000	192	7211
173	0.0000	193	0.0000
174	0.0000	194	0.0000
175	0.0000	195	0.0000

Notes: Parameters 188 thru 199 are used to control the behavior of the auxiliary keys on the operator panel and map them to the custom M code file.

In our example, we want the AUX5 to move the X and Y axis to 0,0 position when pressed.
So to get Aux5 to 'read' and execute the commands in the mfunc72.mac program we created in step 2
To do this, set parameter #192 = 7211   Press F10 to save.
7211 tells control to look for M72 (mfunc72.mac) and run that job when Auxiliary key 7 is pressed.
Where 72 is the custom M-code # to be used and 11 tells the control you want the Aux key to use a custom Mcode.

Test: Be sure machine is ready to move to X0Y0. Now test the feature by pressing Aux7 at the main screen.

Also the M72 custom M-code we just created will work like any other M code and can be called out in a G and M code program or using MDI mode as well.

Use any one of these 12 custom M-codes numbers (M68 thru M79) to create a wide variety of custom functionality.
Table of Aux key #', Associated parameter #, Custom M-code number and M-code program name.

Auxiliary Key #	Parameter #	Custom M-codes	Name of custom M-code program (stored in /cncm directory)
1	188	M68	Mfunc68.mac
2	189	M69	Mfunc69.mac
3	190	M70	Mfunc70.mac
4	191	M71	Mfunc71.mac
5	192	M72	Mfunc72.mac
6	193	M73	Mfunc73.mac
7	194	M74	Mfunc74.mac
8	195	M75	Mfunc75.mac
9	196	M76	Mfunc76.mac
10	197	M77	Mfunc77.mac
11	198	M78	Mfunc78.mac
12	199	M79	Mfunc79.mac

Caution:

- Many machines like ATC machines will already be using several custom M-codes. When creating a new custom M-code, Do not overwrite these existing custom M-code programs. You can see all customvM-codes in the /cncm directory. When creating a new custom M-code, choose a Custom M-code number that is not already being used.
- Before creating a new custom M-code, create a backup of the existing cnc control configuration (which includes the current M-codes) by using the easy and simple "create report" feature in the Utility Menu. If you have to, you can always "restore" report to return the control configuration to its original settings.
- Once you have created custom M-codes and are satisfied with their functionality. Create a report which will automatically make a backup of the custom M-code that you have created.

Using the Canned Auxiliary Key Canned Functions

Auxiliary key parameters # 188 thru 199 also have "canned" functionality that can be activated by simply setting the parameter value to any of these values below.

Function	Set Aux Key parameters #188 (Aux1) thru #199 (Aux 12) to any of these values
No function	0
Input X Axis position	1
Input Y Axis position	2
Input Z Axis position	3
Set Absolute Zero	4
Set Incremental Zero	5
One shot - Drill	6
One shot – Circular Pocket	7
One shot – Rec. Pocket	8
One shot – Frame	9
One shot – Face	10
Execute M-code file	(mcode#)1111
Free Axis (remove power)	14
Go to power feed menu	15
XYZ set Absolute Zero	16
One Shot – Drill BHC	17
One Shot – Drill Array	18

For Example: set Aux key #2 to set XYZ Absolute position using aux key 2. To do this: Set Parameter 189 (Aux Key #2 see chart above) = 16

```
168        0.0000 188        0.0000
169        0.0000 189  16
170        0.0000 190        0.0000
171        0.0000 191        0.0000
172        0.0000 192     7211.0000
173        0.0000 193        0.0000
```

F1 Setup, F3 Config, F3 Parameters, navigate to parameter #, enter value desired and press F10 to save.