

LSIS USA Specific Operation Setup

Multi-Step Frequencies

Purpose

This document is meant to assist setting up LSIS VFD's for applications which need to switch between Multi-Step (preset) speeds via the drives multi-function inputs. Setup and operation can sometimes lead to confusion since the preset speeds are named Low, Mid, and High. It should be known that preset speeds can be set to any value between the programmed minimum and maximum speed range and do **not** need to be programmed in an ascending "Low, Mid, High" order. This is also a reference for determining which preset speed is selected based on the various multi-function input combinations.

Note that the below tables list the maximum number of multi-step frequencies available on each given drive. The number of multi-step frequencies needed is determined by the application requirements. Knowing this, the number of required multi-function inputs programmed to "Multi-Step" will vary (See Example 1 and 2). This document applies to the C100, S100, H100, and iS7 drives.

C100

The C100 supports up to 8 multi-step frequencies. The table below assumes Frq=0 (default) and multi-function inputs P3, P4, and P5 have been programmed to "multi-step low, mid, and high" (Set I19=5, I20=6, and I21=7).

Step #	Step Frequency Setting	P5	P4	P3
0	Main Freq. Ref (0.00 on keypad)	0	0	0
1	St1	0	0	1
2	St2	0	1	0
3	St3	0	1	1
4	I30	1	0	0
5	I31	1	0	1
6	I32	1	1	0
7	I33	1	1	1

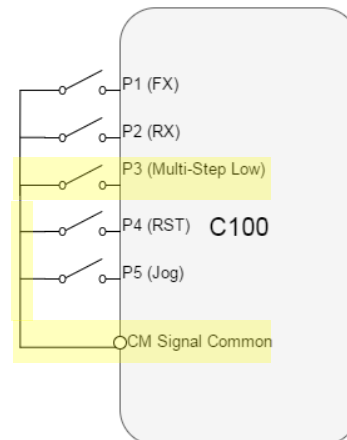
0=Open 1=Closed

Example 1: An application with a C100 drive needs to switch between 45Hz and 60Hz via selector switch.

Program....

- Main Reference=45 Hz
- St1=60 Hz
- I19=5 (P3 function=multi-step)

Required wiring highlighted yellow...



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S100

The S100 supports up to 8 multi-step frequencies. The table below assumes Frq=0 (default) and multi-function inputs P3, P4, and P5 have been programmed to “multi-step low, mid, and high” (Set In.67=7, In.68=8, and In.69=9). Note that some of the frequency step parameters change if using the LCD Loader keypad.

Step #	Step Frequency Setting	P5	P4	P3
0	Main Freq. Ref (0.00 on keypad)	0	0	0
1	St1 (bA.50)*	0	0	1
2	St2 (bA.51)*	0	1	0
3	St3 (bA.52)*	0	1	1
4	bA.53	1	0	0
5	bA.54	1	0	1
6	bA.55	1	1	0
7	bA.56	1	1	1

*with LCD Loader **0=Open 1=Closed**

H100

The H100 supports up to 8 multi-step frequencies. The table below assumes DRV.07=0 (default). Also multi-function inputs P5, P6, and P7 are left at default “multi-step low, mid, and high” (Set IN.69=7, IN.70=8, and IN.71=9).

Step #	Step Frequency Setting	P7	P6	P5
0	DRV.01	0	0	0
1	BAS.50	0	0	1
2	BAS.51	0	1	0
3	BAS.52	0	1	1
4	BAS.53	1	0	0
5	BAS.54	1	0	1
6	BAS.55	1	1	0
7	BAS.56	1	1	1

0=Open 1=Closed

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iS7

The iS7 supports up to 16 multi-step frequencies. The table below assumes DRV.07=0 (default). Also multi-function inputs P5, P6, and P7 are left at default “Speed-L, M, and H” (Set IN.69=7, IN.70=8, and IN.71=9). P8 is set to “Speed-X” (Set IN.72=10).

Step #	Step Frequency Setting	P8	P7	P6	P5
0	DRV.01	0	0	0	0
1	BAS.50	0	0	0	1
2	BAS.51	0	0	1	0
3	BAS.52	0	0	1	1
4	BAS.53	0	1	0	0
5	BAS.54	0	1	0	1
6	BAS.55	0	1	1	0
7	BAS.56	0	1	1	1
8	BAS.57	1	0	0	0
9	BAS.58	1	0	0	1
10	BAS.59	1	0	1	0
11	BAS.60	1	0	1	1
12	BAS.61	1	1	0	0
13	BAS.62	1	1	0	1
14	BAS.63	1	1	1	0
15	BAS.64	1	1	1	1

0=Open 1=Closed

Example 2: An application with an iS7 drive needs four preset speeds (6Hz, 15Hz, 30Hz, 45Hz and 60Hz) using multi-function inputs.

Program....

- DRV.01=6 Hz
- BAS.50=15 Hz
- BAS.51=30 Hz
- BAS.52=45 Hz
- BAS.53=60 Hz
- Leave P5~P7 at default (Speed-L, M, and H)

Required wiring highlighted yellow...

