

APPLICATION NOTE	AN-Lift-0001v111EN
Individual Speed Selection	

Inverter type	FRENIC Lift
Software version	All versions
Required options	Not required
Related documentation	FRENIC Lift Reference Manual INR-SI47-1068a-E FRENIC Lift Instruction Manual INR-SI47-1038b-E
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Languages	English

Introduction.

In FRENIC Lift normally the speed selection is done by binary combination (7 different speeds + Jog speed, C05 to C11 + C20 can be selected). If Individual speed selection is desired, in a first approach it is only possible to select 4 speeds (3 different inputs + JOG, i.e. C5, C6, C8 + C20).

The purpose of this document is to propose a special set up to have the possibility to select more than 4 speeds by means of individual inputs.

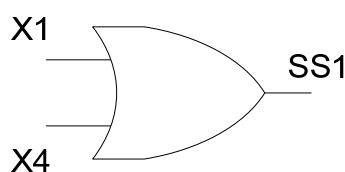
Application implementation.

FRENIC-Lift speed selection -as it is well known- is done by means of setting SS1, SS2 and SS4 in order to select the desired speed accordingly with the well known speed selection table.

One important thing to consider is that the result of setting SS1 to two different digital inputs is a logic OR.

This means that:

If E01= 0 (SS1) and E04 = 0 (SS1) then SS1 = X1 OR X4



E01= SS1

E04= SS1

Connection set up diagram.

The connection diagram in figure 1 shows the complete connection set up.

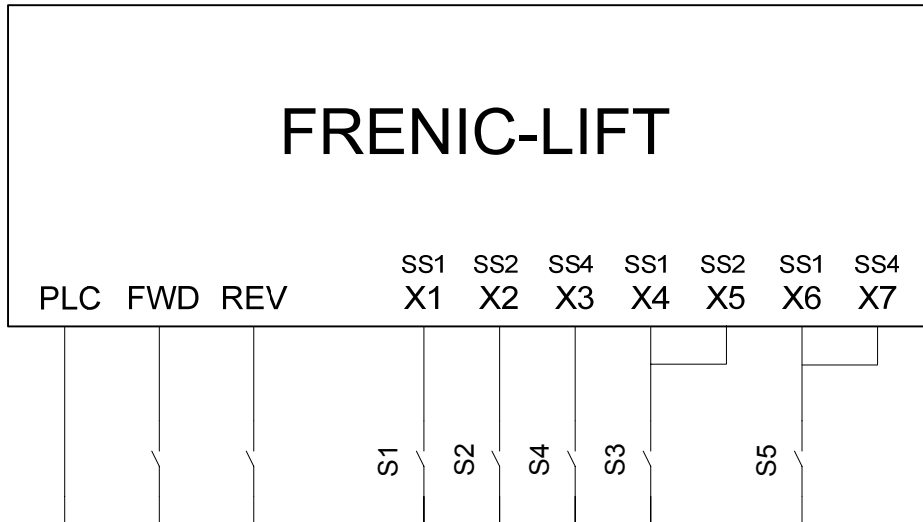


Figure 1. Connection set up diagram.

- S1 = Low Speed
- S2 = Maintenance Speed
- S3 = Creep Speed
- S4 = Medium Speed
- S5 = Fast Speed

Inverter set up.

The following table describes the function settings that must be programmed in the inverter in order to use this solution.

Function	Value	Description
E01	0	Select multistep speed 1 (default) on X1
E02	1	Select multistep speed 2 (default) on X2
E03	2	Select multistep speed 4 (default) on X3
E04	0	Select multistep speed 1 on X4
E05	1	Select multistep speed 2 on X5
E06	0	Select multistep speed 1 on X6
E07	2	Select multistep speed 4 on X7
L17	111b	Middle speed command combination
L18	101b	High speed command combination

The table of speed selection according to the proposed set up is as follows.

Speed	S1	S2	S3	S4	S5	SS4	SS2	SS1	Speed selected
Slow Speed	1	0	0	0	0	0	0	1	C05
Maintenance Speed	0	1	0	0	0	0	1	0	C06
Creep Speed	0	0	1	0	0	0	1	1	C07
Medium Speed	0	0	0	1	0	1	0	0	C08
Fast Speed	0	0	0	0	1	1	0	1	C11

This table can be different if the function set up or the connection set up is different.

To know the ramps and S-curves please refer to the table of accelerations / decelerations table and S-curves table of the manual.

Conclusion.

This application note shows that it is possible to have individual speed selection (up to 5 different speeds) with FRENIC-Lift. A simple wiring and some few changes of parameters must be done.

If it is needed JOG function can be used to add an extra speed (total = 5 speed + JOG speed).

Document history.

Index	Version	Date	Applied by
1.0.0	First	14/01/2008	Jordi Català
1.0.1	Second	16/01/2008	David Bedford
1.0.2	Third	31/01/2008	David Bedford
1.1.0	Fourth	06/02/2008	David Bedford
1.1.1	Fifth. Small errors corrected.	13/02/2008	David Bedford