

UPDATED TO: Software Version 2.0 of the Drive.

8. FREQUENCY INPUT

The drive can have an analog reference speed or a frequency reference speed. By setting two of the four digital inputs (Chap.1) and according to the value of c14, the external speed reference can be selected as follows:

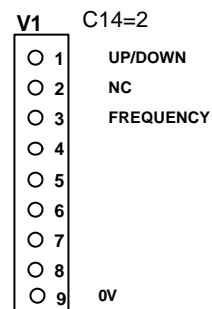
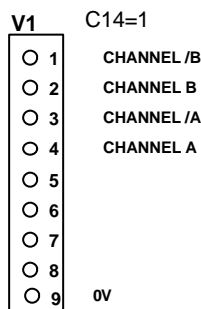
L.I.	c14	External reference
0	X	Analog Reference
1	0	analog reference (default)
	1	4 channels frequency reference (A,A/,B,B/)
	2	frequency reference (freq. and up/down)

With **P10=0** the motor speed is proportional to the input frequency.

With **P10>0** the motor speed is proportional to the input frequency and an internal space control loop is active (proportional gain=P10) so every input pulse correspond to a partial motor rotation.

With **P10>0** you can recover the position set by the master. **The memory of the positioner is 32750 pulses**

- Frequency input encoder type: 2 differential channels (0V ÷ +5V). Maximum frequency speed reference: 300khz.
- Frequency input by only one single channels and up/down selector (0V ÷ +5V). Maximum frequency speed reference: 300khz.



If you use SDR as a **master** (c52=1) the output frequency is equal to:

$$Fr = 1024 \frac{P52}{60} \frac{P54}{2}$$

The speed of the slave is a function of the input frequency, once the parameter P61 and the number of encoder pulses /electric revolution have been set (set by **c11**).

The desired drive speed can be obtained from an input frequency **Fr** by setting **P61** as follows:

$$P61 = RPM_{slave} \cdot \frac{4096 \cdot N}{60 \cdot Fr}$$

P61 is the ratio between the speed of the slave and of the master

$$RPM_{slave}$$

desired speed of the slave at frequency **Fr**

$$N$$

number of encoder pulses /electric revolution (set by **c11**)

$$Fr$$

Input frequency

Examples of a SLAVE connected to a MASTER with frequency input as standard encoder.

From a MASTER we have considered the simulated encoder signals A_v/A_B, B_v/B_B and we have connected them to a SLAVE frequency input. By programming the parameter P61 it's possible to select the sliding between two drives . (**P61=4096 correspond to a ratio=1**)

MASTER	SLAVE
	c11=5 (1024)
P52=3000rpm	P52=2500 rpm
	P61=4096
The SLAVE runs at the same speed of the MASTER	

MASTER	SLAVE
	c11=5 (1024)
P52=2500rpm	P52=2500 rpm
	P61=2048
The SLAVE runs half the speed of the MASTER	

MASTER	SLAVE
	c11=5 (1024)
P52=2500rpm	P52=2500 rpm
	P61=8192
The SLAVE runs double speed the MASTER	

Note. The max allowed error is 32750 pulses.

c11 is the number of pulses/ resolver revolution and you can set it in the slave:

C11	puls/rev motor/(P54/2)
0	0
1	64
2	128
3	256
4	512
5	1024
6	2048
7	4096

Default value **c11=4**.