

Sommario

**DC10ChVelRat** ..... 3

***IMPLEMENTATION*** ..... 3

        Error ..... 3



## DC10ChVelRat

**D** = Device(*camming3*, *camming4*)

**C** = Calculation functions

The DC10ChVelRat function execute the calculations needed in order to set and/or change the speed ratio **RV** (RV = Slave Speed/Master Speed) an electric shaft between a Master axis and a Slave axis.

You must pass values by reference speed of the Master, of the new speed ratio, the resolution is specified in the RV, the sampling time of the CAMMING device (or 4), the type of softening during speed changes. Function writes directly on the CAMMING3 (or 4) device sectors to run electric gearing with the new speed ratio. The function also returns the values on the "Error" variable, on the "Texec" variable and on "WrExec" flag.

If the function is executed with the cam is not in execution, the cam is programmed with the RV set. The next STARTCAM electric gearing attaches to the master with the RV.

If the function is executed with the cam in execution, activates a rewrite "on the fly" with the new RV cam that by the time "Texec" is carried out.

## IMPLEMENTATION

**DC10ChVelRat (Cam, Vmaster, Rapp\_SM, Risol, Tcamp, TipoAdd, Texec, WrExec, Error)**

Parameters:

IN/OUT	VARIABLE TYPE	EXAMPLE NAME	DIM	
IN	CAMMING3 CAMMING4	Cam		Device type to which you can apply the function
IN	SYSTEM	Vmaster	L	Reference speed of the master with which you perform calculations of space to be execute from the master and the slave (UM/sec, UM/min). It is recommended to insert the speed at which you are moving the master (see notes).
IN	SYSTEM	Rapp_SM	L	Slave Speed/Master Speed ratio expressed in units, tenths, hundredths or thousandths depending on the Res. parameter
IN	SYSTEM	Risol	W	RV resolution: greatness with which you can express the RV (0: tens, 1: tenths, 2: cents, 3: thousandths)
IN	SYSTEM	Tcamp	W	Sampling time of the CAMMING3 (or 4) device expressed in S/1000.
IN	SYSTEM	TipoAdd	B	Kind of softening during speed changes of the slave (0, 1, 2, 3, 4, 5).
OUT	SYSTEM	WrExec	F	Flag to indicate that the writing of the cam was executed.
OUT	SYSTEM	Texec	L	Time in s/1000 to execute the change of speed ratio.
OUT	SYSTEM	Error	B	The function error

### Error

After calling the function, the error variable can take on certain values, the meaning of these values is summarized below:

- 0: calculation executed without errors
- 1: Null sample time
- 2: Null speed ratio
- 3: Null Master Speed
- 4: Cam error

### Note

- In case the Texec is too high for your application that uses the function, It is advisable to check that the resolution of the master and the slave CAMMING3 (or 4) device is the highest possible and that the relationship  $\text{measurment} / \text{pulses} \text{ and } \text{measure} / \text{pulse}$  is as nearest possible to 1.
- The higher the resolution "Resol" more longer the time required to switch to the new RV, If you want to lower this time consider reducing "Resol" at the expense of accuracy in the value of the RV.
- If the speed of the Master passed to the function is similar to the actual speed of movement of the Master (within the 80%) then you can run the function at intervals equal to the value contained in Texec. If the Master speed passed to the function is much lower (most of the 80%) from the real one, you have to increase the time between calls the other function (> of Texec) otherwise the device goes into error and the axis stops responding in emergency.
- If the actual speed of the master is greater than 3 times the declared function, it's possible that the device goes into error and stops in an emergency.

## Example of use

An example of using the function with a speed of the master of the real one is:

```
....  
Rapp_SM = 1500  
Resol = 3  
Vmaster = 2750      ;Current speed of the master  
Tcamp = 2  
TipoAdd = 1  
DC10ChVelRat (Cam, Vmaster, Rapp_SM, Risol, Tcamp, TipoAdd, Texec, WrExec, Error)  
WAIT WrExec      ;hold write occurred  
WrExec = 0  
tmTim = Texec      ;waiting change ratio of speed execute  
WAIT tmTim OR Error  
....
```

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