OPEN DRIVE

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Application 009

Lifter speed management

TDE MACNO

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SCHEMATIC DIAGRAM

This OPEN DRIVE application has made specific for Lifter management.

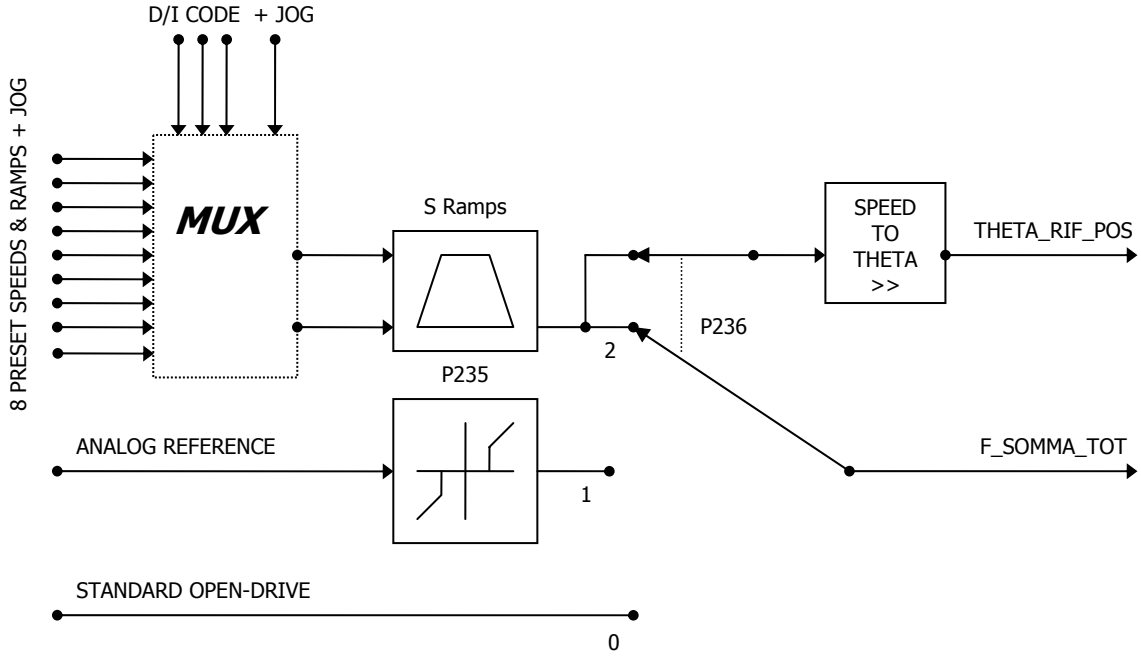
The main difference between this application and the standard version are:

Death Band Mode (P236=1)

1. A death band set on the analog speed reference

Digital Speed References (P236=2)

1. 8 chooseble speeds reference and ramps selected by a binary code on 3 digital inputs (Input logic function I30-I32).
2. Automatic overlapped position loop enable with the run command
3. The integral part of speed and position loop loop can be reset by a digital input (Input logic function 29).
4. A JOG speed reference with its ramps enable by a digital input (Input logic function I33) .



APPLICATION CONFIGURATION

Application Extra Parameters

PAR	DESCRIPTION	CAMPO di variazione	VALORE di default	UNITA' di normalizzaz	Rappr. interna
P200	Speed Reference Code 000	± 100%	0.00	% n Max	16383
P201	Speed Reference Code 001	± 100%	0.00	% n Max	16383
P202	Speed Reference Code 010	± 100%	0.00	% n Max	16383
P203	Speed Reference Code 011	± 100%	0.00	% n Max	16383
P204	Speed Reference Code 100	± 100%	0.00	% n Max	16383
P205	Speed Reference Code 101	± 100%	0.00	% n Max	16383
P206	Speed Reference Code 110	± 100%	0.00	% n Max	16383
P207	Speed Reference Code 111	± 100%	0.00	% n Max	16383
P208	Speed Reference for JOG	± 100%	0.00	% n Max	16383
P209	Acceleration Time Code 000	0.01 ÷ 199.99	10.00	sec	100
P210	Acceleration Time Code 001	0.01 ÷ 199.99	10.00	sec	100
P211	Acceleration Time Code 010	0.01 ÷ 199.99	10.00	sec	100
P212	Acceleration Time Code 011	0.01 ÷ 199.99	10.00	sec	100
P213	Acceleration Time Code 100	0.01 ÷ 199.99	10.00	sec	100
P214	Acceleration Time Code 101	0.01 ÷ 199.99	10.00	sec	100
P215	Acceleration Time Code 110	0.01 ÷ 199.99	10.00	sec	100
P216	Acceleration Time Code 111	0.01 ÷ 199.99	10.00	sec	100
P217	Acceleration Time for JOG	0.01 ÷ 199.99	10.00	sec	100
P218	Deceleration Time Code 000	0.01 ÷ 199.99	10.00	sec	100
P219	Deceleration Time Code 001	0.01 ÷ 199.99	10.00	sec	100
P220	Deceleration Time Code 010	0.01 ÷ 199.99	10.00	sec	100
P221	Deceleration Time Code 011	0.01 ÷ 199.99	10.00	sec	100
P222	Deceleration Time Code 100	0.01 ÷ 199.99	10.00	sec	100
P223	Deceleration Time Code 101	0.01 ÷ 199.99	10.00	sec	100
P224	Deceleration Time Code 110	0.01 ÷ 199.99	10.00	sec	100
P225	Deceleration Time Code 111	0.01 ÷ 199.99	10.00	sec	100
P226	Deceleration Time for JOG	0.01 ÷ 199.99	10.00	sec	100
P227	Rounding time for starting CW acceleration ramp	0.1 ÷ 20.0	5.0	Sec	10
P228	Rounding time for arriving CW acceleration ramp	0.1 ÷ 20.0	5.0	Sec	10
P229	Rounding time for starting CW deceleration ramp	0.1 ÷ 20.0	5.0	Sec	10
P230	Rounding time for arriving CW deceleration ramp	0.1 ÷ 20.0	5.0	Sec	10
P231	Rounding time for starting CCW acceleration ramp	0.1 ÷ 20.0	5.0	Sec	10
P232	Rounding time for arriving CCW acceleration ramp	0.1 ÷ 20.0	5.0	Sec	10
P233	Rounding time for starting CCW deceleration ramp	0.1 ÷ 20.0	5.0	Sec	10
P234	Rounding time for arriving CCW deceleration ramp	0.1 ÷ 20.0	5.0	Sec	10
P235	Death Band on Speed reference	0.00 ÷ 100.00	0.00	% n Max	16383
P236	Application Mode: 0 = Standard OPD 1 = Death Band on Analogic reference 2 = 8 Preset Speed or JOG reference	0÷2	0	Standard OPD	
P237	Load the default extra parameter values	0 ÷ 1	0		0
P238	Read from Flash the extra parameter values	0 ÷ 1	0		0
P239	Save on the Flash the extra parameter values	0 ÷ 1	0		0

Input logic functions:

INPUT LOGIC FUNCTIONS		INPUT di DEFAULT	STATO di DEFAULT	Vedi
I29	Disable Integral speed loop	5	H	
I30	Bit 0 lifter speed table	6	L	
I31	Bit 1 lifter speed table	7	L	
I32	Bit 2 lifter speed table	8	L	
I33	Enable Jog speed	3	L	

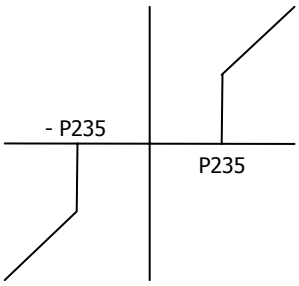
Internal values

INT	DESCRIPTION	UNIT	Intern.rep.
d50	Binary code selected for speed reference		

APPLICATION DESCRIPTION

Death Band Mode (P236=1)

This mode is enabled with **P236=1**. With this function it's possible to impose a death band on the total speed reference "f_somma_tot" in percent of maximum motor speed.
The death band amplitude can be set with parameter **P235** and it's symmetric with the speed sign.



Digital Speed References (P236=2)

- This mode is enabled with **P236=2.** In this mode it's possible to select up to 8 digital speed reference using 3 digital inputs configured to the Input logic function **I30÷I32**. There is another reference (Jog), that can be enable with the digital input logic function **I33**.

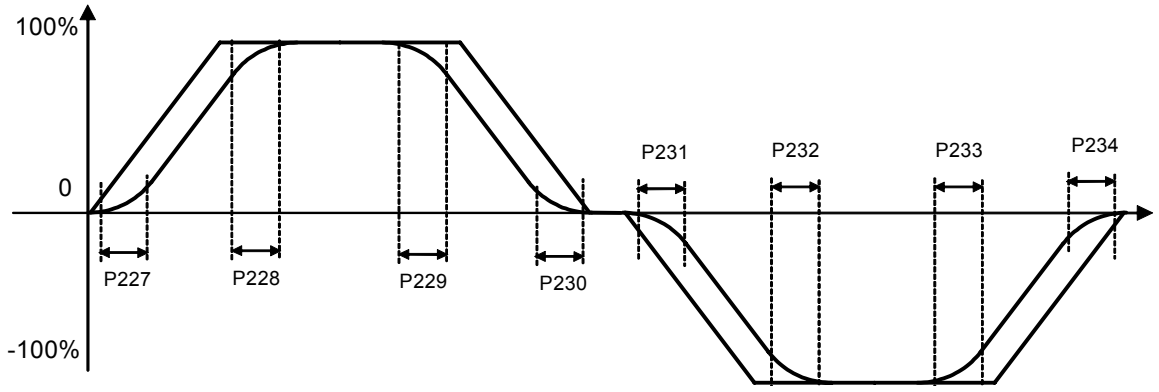
  For every speed reference selected it's possible to choose also the linear acceleration and deceleration time:

I33	I32	I31	I30	Speed reference	Acceleration time	Deceleration time
0	0	0	0	P200	P209	P218
0	0	0	1	P201	P210	P219
0	0	1	0	P202	P211	P220
0	0	1	1	P203	P212	P221
0	1	0	0	P204	P213	P222
0	1	0	1	P205	P214	P223
0	1	1	0	P206	P215	P224
0	1	1	1	P207	P216	P225
1	x	x	x	P208	P217	P226

- In this mode when the drive is running it's automatically enable the overlapped position loop, for control the motor in position and not only in speed. The position reference is give by the speed reference selected and by the time when this speed refernce is active.

- When the motor is running, it's possible to reset the speed and position memory of integral part using the digital input function **I29**

- The ramps on the speed reference are rounded (S-ramps) and it's possible to set the rounding time of 8 situations:



The rounded ramps are independents from the speed reference selected.