



DMAC 31 May

Fold back Motion buffer

KOLLMORGEN
Servotronix

Fold back



- When I [Amp rms] reach ILIM, start Fold back
- When I [Amp rms] reach ICONT, end fold back
- And start FOLDR

$$I_{rms} = \sqrt{\frac{1}{T} \int_0^T i^2 dt}$$

IMAX=min(DIPEAK,MIPEAK)

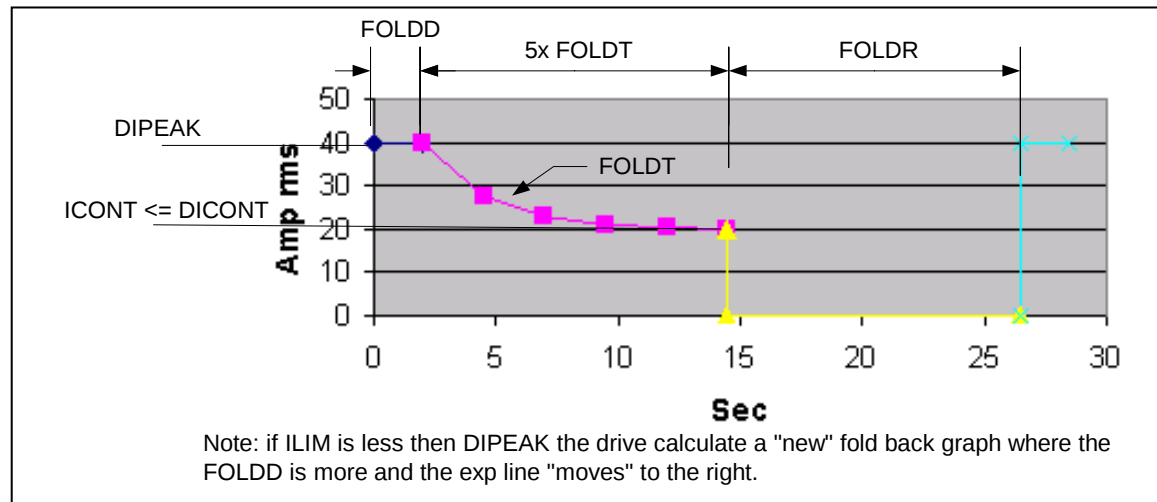
ILIM=user define from 0 to IMAX

ICONT = user define 0 to ILIM

Defult up on config

ILIM = IMAX

ICONT = min(DICONT, MICONT)



Calculate Current



Calculate current for

ANIN 2000 2 [V]

DIPEAK 180 18 [Arms]

ISCALE 800

$$\begin{aligned}\text{Current} &= 2000/10000 \times 180/10 \times 800/1000 \\ &= 0.2 \times 18 \times 0.8 \\ &= 2.88 \text{ Amp rms}\end{aligned}$$

$$I = 2.88 / 18 \times 1000 = 160 \text{ [servo star]}$$

$$\begin{aligned}\text{Current} &= I \times 18 / 1000 \\ &= 160 \times 18 / 1000 \\ &= 2.88\end{aligned}$$

Typical Fold back value



CD03

DICONT

DIPEAK	90
ICONT	30
FOLDD	1000
FOLDT	1450
FOLDR	17000

CD10

DICONT

DIPEAK	200
ICONT	100
FOLDD	2000
FOLDT	2500
FOLDR	12000

CD06

DICONT

DIPEAK	180
ICONT	60
FOLDD	1000
FOLDT	1450
FOLDR	17000

CD20

DICONT

DIPEAK	400
ICONT	200
FOLDD	2000
FOLDT	2500
FOLDR	12000

Fold back Exercise



Operate the DEMO system in a way that you see “F” on the seven segment display (hint: you need to change some parameters)

Write down the value of

FOLDD = _____

FOLDR = _____



- Foldback

Is this the expected value?

[Fold back calculator](#)

Available 1,2,4,8, 16 motions buffer.

- Use INxMODE= 7 to trigger index movements
- Use INxMODE= 28 to trigger absolute movements.

BIT0 - INxMODE= 15

BIT1 - INxMODE= 14

BIT2 - INxMODE= 28

BIT3 - INxMODE= 29

C3 user I/O

IN1MODE= 0

IN2MODE= 0

IN3MODE= 0

**Available value: from 0 to 30,
maximum latency 2 mS.**

C9 Extended I/ O

IN4MODE= 0

IN5MODE= 0

IN6MODE= 0

Available value: 0- 2, 7- 9,12- 15, 17- 30

Motion Buffer

Example:

	Binary				Switch	16 different Incremental movements	Set speed to 100 RPM
Line	BIT3	BIT2	BIT1	BIT0	Incremental		
	IN4MODE =29	IN3MODE =28	IN2MODE =14	IN1MODE =15	IN5MODE =7		
0	0	0	0	0	0 to 1 transition	MIDIST0=100	MISPEED0=100
1	0	0	0	1	--	MIDIST1=200	MISPEED1=100
2	0	0	1	0	--	MIDIST2=300	MISPEED2=100
3	0	0	1	1	--	MIDIST3=400	MISPEED3=100
4	0	1	0	0	--	MIDISTX=4 500	MISPEEDX=4 100
5	0	1	0	1	--	MIDISTX=5 600	MISPEEDX=5 100
6	0	1	1	0	--	MIDISTX=6 700	MISPEEDX=6 100
7	0	1	1	1	--	MIDISTX=7 800	MISPEEDX=7 100
8	1	0	0	0	--	MIDISTX=8 900	MISPEEDX=8 100
9	1	0	0	1	--	MIDISTX=9 1000	MISPEEDX=9 100
10	1	0	1	0	--	MIDISTX=10 1100	MISPEEDX=10 100
11	1	0	1	1	--	MIDISTX=11 1200	MISPEEDX=11 100
12	1	1	0	0	--	MIDISTX=12 1300	MISPEEDX=12 100
13	1	1	0	1	--	MIDISTX=13 1400	MISPEEDX=13 100
14	1	1	1	0	--	MIDISTX=14 1500	MISPEEDX=14 100
15	1	1	1	1	--	MIDISTX=15 1600	MISPEEDX=15 100

0 – OFF, 1 - ON

Motion Buffer Exercise



Do eight buffer motion use BIT0 BIT1 BIT2.

BIT0 MI half rev @ 200 RPM

BIT1 MI two rev @ 300 RPM

BIT2 MI one rev @ 20 RPM

[Motion buffer application note](#)