

CAMCON 鼓序列

测试报告

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I Versions

Version	Date	Comment	Edited by
1.0	Nov 6, 2006	First Edition	

Table 1: Versions

II Distribution

Name	Company, Department	Amount	Remarks

Table 2: Distribution

III Safety Notices

Safety notices in this document are organized as follows:

Safety notice	Description
Danger!	Disregarding the safety regulations and guidelines can be life-threatening.
Warning!	Disregarding the safety regulations and guidelines can result in severe injury or heavy damage to material.
Caution!	Disregarding the safety regulations and guidelines can result in injury or damage to material.
Information:	Important information used to prevent errors.

Table 3: Safety notices

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1 测试目的

了解 CAMCON 鼓序列运行机制, 可实现的功能.

2 测试过程

- 编码器:load=100,rev=1.
- 跟踪主轴: ID111(实际位置),

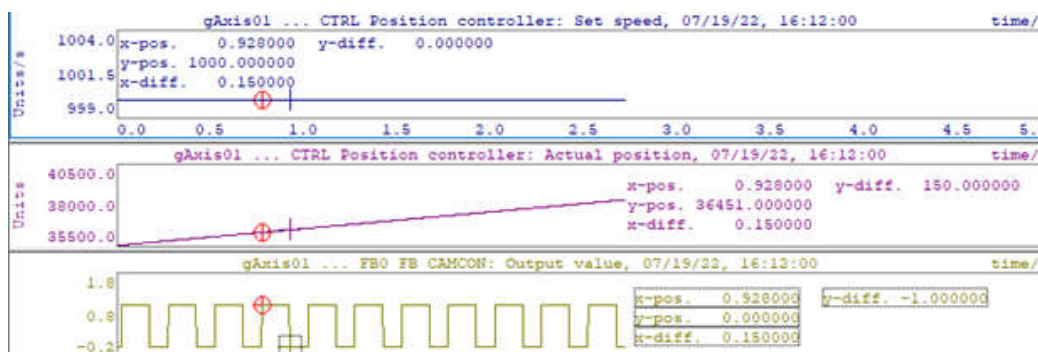
2.1 模式 1

- 每 250 个 units 来一个 interval 间隔,
- interval 到来后, 数 50 个 units, CAMCON_VALUE=1, 数到 200, CAMCON_VALUE=0.

2.1.1 SPT 配置

CAMCON				
FUNCTION_BLOCK_CREATE	777	10752		Function block: Create a FB instance
CAMCON_MODE+0	10752	0		FB0 CAMCON Mode
CAMCON_IN_PARID+0	10760	111		FB0 CAMCON Parameter ID of input
CAMCON_EV_PARID+0	10864	0		FB0 CAMCON Parameter ID start event
CAMCON_S_START+0	10768	0		FB0 CAMCON Start position
CAMCON_S_IV+0	10776	250		FB0 CAMCON Interval
CAMCON_T_DELAY_ON+0	10784	0	s	FB0 CAMCON Delay time to switch output ON
CAMCON_T_DELAY_OFF+0	10792	0	s	FB0 CAMCON Delay time to switch output OFF
CAMCON_T1_DELAY+0	10800	0	s	FB0 CAMCON Switch delay: Filter time constant
CAMCON_HYSTERESIS+0	10808	0		FB0 CAMCON Hysteresis window
CAMCON_MAX_CAM+0	10816	1		FB0 CAMCON Maximum number of cams
CAMCON_CAM_INDEX+0	10824	1		FB0 CAMCON Index of parameter record for one cam
CAMCON_CAM_S1+0	10832	50		FB0 CAMCON Start position of cam within interval
CAMCON_CAM_S2+0	10840	200		FB0 CAMCON End position of cam within interval
CAMCON_VALUE+0	10848			FB0 CAMCON Output value
CAMCON_MODE+0	10752	1		FB0 CAMCON Mode

2.1.2 运行结果: 一个 interval 里面有 1 个脉冲序列.



按 1rps 运行, 每圈 4 个, 上图 2.73s, 约 11 个. 每个宽度 200-50=150units.

2.2 设置 2 个鼓序列.

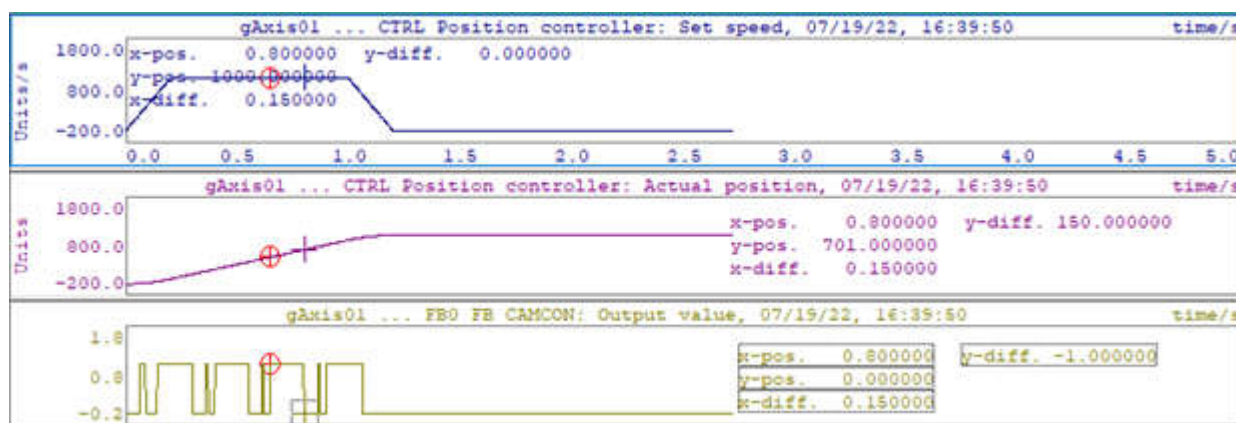
一个 interval 里面产生 2 个不同脉冲序列.

2.2.1 SPT 配置如下

CAMCON				
FUNCTION_BLOCK_CREATE	777	10752		Function block: Create a FB instance
CAMCON_MODE+0	10752	0		FB0 CAMCON Mode
CAMCON_IN_PARID+0	10760	111		FB0 CAMCON Parameter ID of input
CAMCON_EV_PARID+0	10864	0		FB0 CAMCON Parameter ID start event
CAMCON_S_START+0	10768	0		FB0 CAMCON Start position
CAMCON_S_IV+0	10776	250		FB0 CAMCON Interval
CAMCON_T_DELAY_ON+0	10784	0	s	FB0 CAMCON Delay time to switch output ON
CAMCON_T_DELAY_OFF+0	10792	0	s	FB0 CAMCON Delay time to switch output OFF
CAMCON_T1_DELAY+0	10800	0	s	FB0 CAMCON Switch delay: Filter time constant
CAMCON_HYSTERESIS+0	10808	0		FB0 CAMCON Hysteresis window
CAMCON_MAX_CAM+0	10816	2		FB0 CAMCON Maximum number of cams
CAMCON_CAM_INDEX+0	10824	1		FB0 CAMCON Index of parameter record for one cam
CAMCON_CAM_S1+0	10832	10		FB0 CAMCON Start position of cam within interval
CAMCON_CAM_S2+0	10840	20		FB0 CAMCON End position of cam within interval
CAMCON_CAM_INDEX+0	10824	2		FB0 CAMCON Index of parameter record for one cam
CAMCON_CAM_S1+0	10832	50		FB0 CAMCON Start position of cam within interval
CAMCON_CAM_S2+0	10840	200		FB0 CAMCON End position of cam within interval
CAMCON_VALUE+0	10848			FB0 CAMCON Output value
CAMCON_MODE+0	10752	1		FB0 CAMCON Mode

- 间隔都是 250units
- 第 1 个序列是从 10 开始,到 20 结束;
- 第 2 个序列是从 50 开始,到 200 结束.
- 如果设了 CAMCON_MAX_CAM>1, 但是只对 CAMCON_CAM_INDEX 定义 1 次, 会报" switch positions not in ascending order".

2.2.2 测试结果: 一个 interval 里面有 2 个鼓序列



上图 of rel_mov, 发出了 2 组鼓序列, 第一组: index=1 定义的窄序列. 第 2 组: index=2 定义的宽序列.

2.3 模式 5

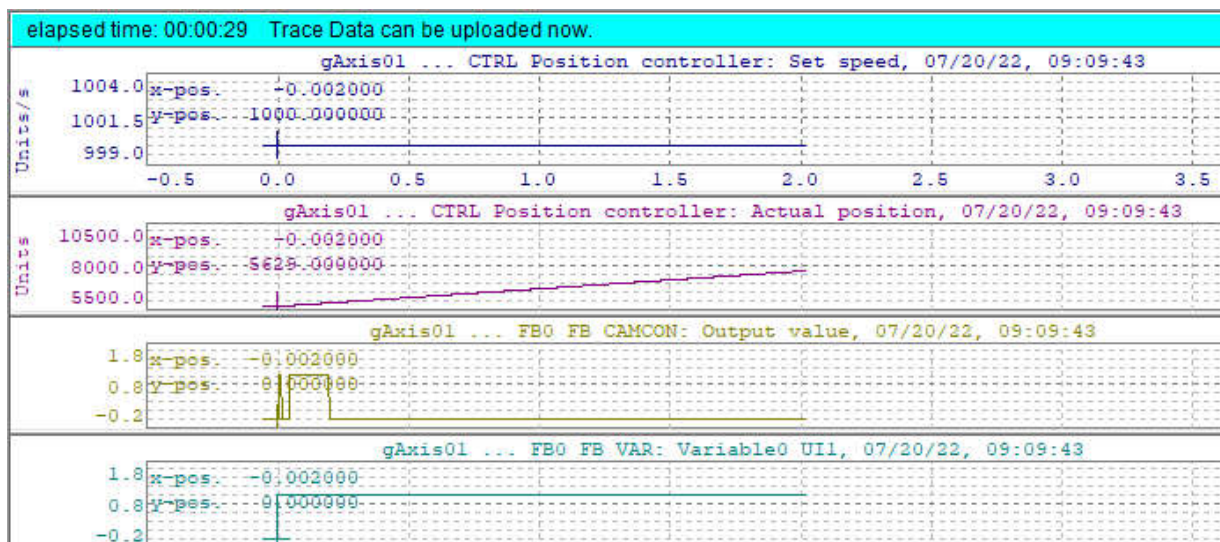
- ID4192 为触发条件 (0>1)

- 触发后, 紧接着的 1 个 interval 里面产生 2 个脉冲序列.

2.3.1 SPT 配置

CAMCON				
FUNCTION_BLOCK_CREATE	777	4192		Function block: Create a FB instance
FUNCTION_BLOCK_CREATE	777	10752		Function block: Create a FB instance
CAMCON_MODE+0	10752	0		FB0 CAMCON Mode
CAMCON_IN_PARID+0	10760	111		FB0 CAMCON Parameter ID of input
CAMCON_EV_PARID+0	10864	4192		FB0 CAMCON Parameter ID start event
CAMCON_S_START+0	10768	0		FB0 CAMCON Start position
CAMCON_S_IV+0	10776	250		FB0 CAMCON Interval
CAMCON_T_DELAY_ON+0	10784	0	s	FB0 CAMCON Delay time to switch output ON
CAMCON_T_DELAY_OFF+0	10792	0	s	FB0 CAMCON Delay time to switch output OFF
CAMCON_T1_DELAY+0	10800	0	s	FB0 CAMCON Switch delay: Filter time constant
CAMCON_HYSTERESIS+0	10808	0		FB0 CAMCON Hysteresis window
CAMCON_MAX_CAM+0	10816	2		FB0 CAMCON Maximum number of cams
CAMCON_CAM_INDEX+0	10824	1		FB0 CAMCON Index of parameter record for one cam
CAMCON_CAM_S1+0	10832	10		FB0 CAMCON Start position of cam within interval
CAMCON_CAM_S2+0	10840	20		FB0 CAMCON End position of cam within interval
CAMCON_CAM_INDEX+0	10824	2		FB0 CAMCON Index of parameter record for one cam
CAMCON_CAM_S1+0	10832	50		FB0 CAMCON Start position of cam within interval
CAMCON_CAM_S2+0	10840	200		FB0 CAMCON End position of cam within interval
CAMCON_VALUE+0	10848			FB0 CAMCON Output value
CAMCON_MODE+0	10752	5		FB0 CAMCON Mode

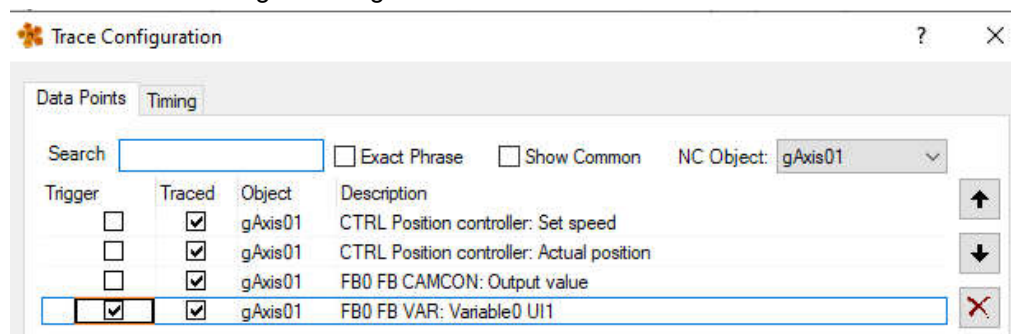
2.3.2 测试结果: 触发后, 第一个 interval 有 2 个脉冲.



注意: 第一次貌似触发没成功.(原因是事件来后, 也需要一个 interval 移动才出脉冲凸轮)

2.3.3 时间出发操作步骤:

- 1) 启动触发: start tracing as configured



- 2) POS_MOVE 主轴
- 3) Service 通道写 ID4192=1

Name	Value	Unit	Description
service			Service Interface
data_adr	98251492		Data address
data_text	1		Data in text format
request			Request (to the drive)
par_id	4192; VAR_UI1_...		Parameter ID

这样模式 5 就测试成功了。

3 总结

- 1) 有 1/2/4/5 四种模式, 为双向运动有效.
- 2) 上述 4 种模式+16, 则只有正向有效.
- 3) 模式 1: 直接从当前位置开始, 每个 interval 周期性地产生 1 到 num 组脉冲序列(也叫 CAM 凸轮); 当前这个 interval 不起作用.
- 4) 模式 2: 和模式 1 功能一样, 只是当前的 interval 就起作用了.
- 5) 模式 4: 和模式 1 类似. 只是在 interval 之前必须让主轴先走 s_st, 然后才立即进入 interval 周期发脉冲;
- 6) 模式 5: 事件触发后, 立即在接下来的第一个主轴 interval 位置移动里面, 产生 1 到 num 组脉冲序列. 后续的 interval 被直接忽略. 除非事件再来一次(1->0->1)
(The end)

4 Figure Index

Es konnten keine Einträge für ein Abbildungsverzeichnis gefunden werden.

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6 Listing Index

Es konnten keine Einträge für ein Abbildungsverzeichnis gefunden werden.

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