

非常规线数Sin Encoder时8AC120的配置

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1. 目录

2. 背景

客户一转盘机使用“X20CP0482-ACOPOS1320-8AC120.60-正余弦增量编码器（4320线）-第三方 不带抱闸伺服电机”的组态，出现编码器返回值(200)与轴初始化参数表中units(36000)不一致的现象。

3. 8AC120配置

Encoder scaling: Increments per encoder revolution计算方式为 $16384 * \text{编码器线数}$ ，按该配置会复现上述故障。

Name	Value	Unit	Description
8AC120.60-1			
Encoder			
Function model	Sine encoder		Module's operating mode
Type	ncINC		
Encoder scaling: Increments per encoder revolution	70778880		
Ignore check	0		
Load Scaling			For SS2 this parameters must be defined in the Init Parameter Table
Units per encoder revolutions	36000	Units	
Encoder revolutions	1		
Count direction	ncSTANDARD		
Time constant for actual position filter	0.0	s	For SS2 the filters from the ACOPOS Parameter Table must be used
Extrapolation time for actual position filter	0.0	s	For SS2 the filters from the ACOPOS Parameter Table must be used
Sine/Cosine inputs			Differential signals, symmetric
Signal transmission			DC up to 300 kHz
Signal frequency (-3 dB)			DC up to 400 kHz
Signal frequency (-5 dB)			
Differential voltage			
Common-mode voltage			
Terminating resistor			
Resolution 4)			
Precision 5)			

4. 解决办法

- Encoder scaling: Increments per encoder revolution应配置为 $393216(70778880/180)$ 。即对于非常规线数正余弦增量编码器，Resolution公式应改为 $16384 * \text{线数}/N$ ，其中N=初始化参数表units/手动盘动电机轴一周后ID91的差值。
- Ignore check设为3（忽略AB相）

5. 上电后初始化步骤

该工况非常规情况，在保证MotorSynchronous_any[Configuration]正确性的条件下，行下述操作：

- SPT表(.apt)写ID276=0，transfer后重启
- 打开Test，ID63写0
- ID276写1，ID334写258，等待寻参结束
- Switch on，ncDirect模式下Homing