

博途 V16 中通过 SinaPara 功能块读写驱 动参数

Product / version / specification / keyword

https://support.industry.siemens.com/cs/ww/en/view/Entry_ID

Siemens
Industry
Online
Support



This entry is from the Siemens Industry Online Support. The general terms of use (http://www.siemens.com/terms_of_use) apply.

Security information

Siemens provides products and solutions with industrial security functions that support the secure operation of plants, systems, machines and networks. In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens' products and solutions only form one element of such a concept.

Customer is responsible to prevent unauthorized access to its plants, systems, machines and networks. Systems, machines and components should only be connected to the enterprise network or the internet if and to the extent necessary and with appropriate security measures (e.g. use of firewalls and network segmentation) in place.

Additionally, Siemens' guidance on appropriate security measures should be taken into account. For more information about industrial security, please visit <http://www.siemens.com/industrialsecurity>.

Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends to apply product updates as soon as available and to always use the latest product versions. Use of product versions that are no longer supported, and failure to apply latest updates may increase customer's exposure to cyber threats.

To stay informed about product updates, subscribe to the Siemens Industrial Security RSS Feed under <http://www.siemens.com/industrialsecurity>.

目录

1	概述.....	4
2	编程步骤和参数解释	4
3	功能块使用示例.....	6

1 概述

在博途 V16 中可以通过 SinaPara（FB302）功能块对驱动参数进行读写操作，借助这个功能块，可向 SINAMICS S/G/V 驱动器读取或写入多达 16 个参数。与以前的 SINA_PARA FB286 功能块的主要区别是增加了 Parameter 参数，使用起来更加方便。本文以 SINAMICS S120 驱动器为例进行操作说明。

2 编程步骤和参数解释

- (1) 创建博途项目，打开 OB1，随后打开指令，选择“选件包”，再选 SINAMICS 中的“SinaPara”，将其拖拽到网络中，并填写相关参数。



- (2) “SinaPara”功能块输入/输出参数的说明如表 1-1 所示。

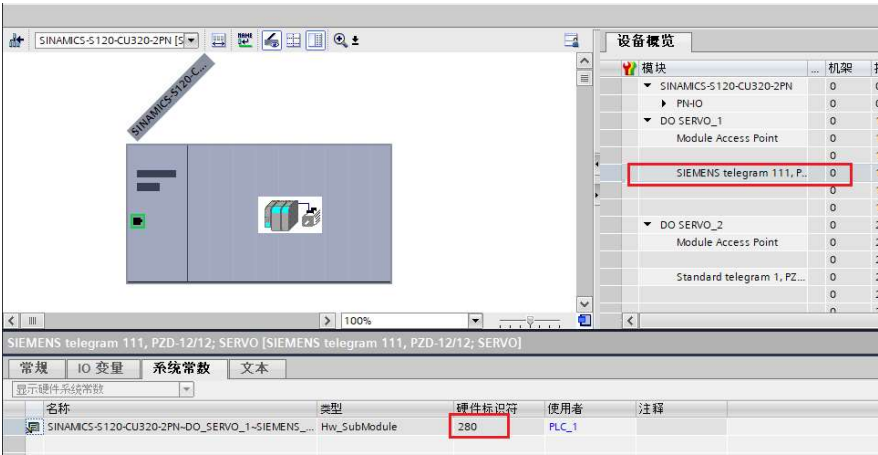
表 1-1 “SinaPara”功能块输入/输出参数的说明

参数	数据类型	类型	默认值	含义
输入参数				
Start	BOOL	输入	0	开始任务（0=无任务或任务取消；1=开始并执行任务）
ReadWrite	BOOL	输入	0	任务类型 0=读取，1=写入
ParaNo	INT	输入	1	读写参数的数目：1 到 16 个
AxisNo	INT	输入	1	多轴系统中的轴编号/轴 ID
hardwareId	HW_IO	输入	0	模块接入点/轴或驱动的实际值 报文槽的硬件 ID
Parameter	DB	输入	...	访问参数的数据区域
输出参数				
Ready	BOOL	输出	0	反馈就绪信号
Busy	BOOL	输出	0	如果“Busy”=1,表示正在处理任务
Done	BOOL	输出	0	任务完成表示边沿从 0 变到 1
Error	BOOL	输出	0	组故障激活 “Error”变 1
ErroId	DWORD	输出	0	第 1 个字标识以二进制编码的

				形式标注出现了哪个参数访问故障 第 2 个字：故障类型
DiagId	WORD	输出	0	扩展通讯错误：SFB 调用错误

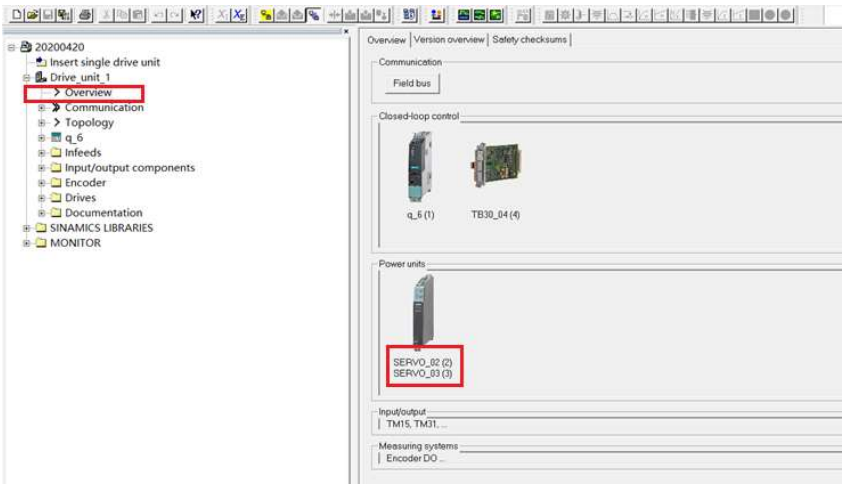
(3) hardwareId 参数查询方法

在驱动器的组态中，选择需要读取的驱动对象的报文，在属性中找到 Hardware identifier ；

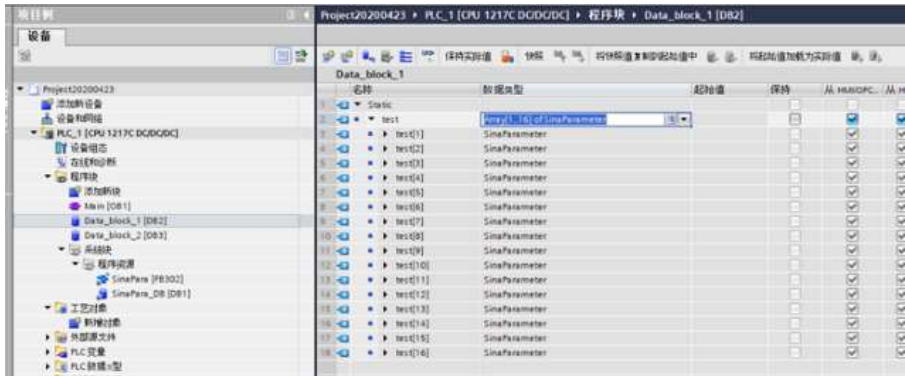


(4) AxisNo 参数查询方法

打开驱动软件(如 S120 的调试软件 Starter), 在 Overview 中获取对应驱动对象的编号，对于 V90 驱动固定为 2，对于 S210 驱动固定为 1 ；



(5) Parameter 参数的定义方法，创建一个数据块，添加长度为 16 个 SinaParameter 类型的数组（Array[1..16] of SinaParameter）,这样可以通过数据块定义参数的方式访问任务 ；



“Parameter”的数据结构:

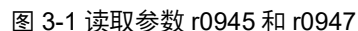
- (1) Parameter[x].siParaNo : 参数号 (数值范围 : 1..65535)
- (2) Parameter[x].siIndex : 参数索引 (数值范围 : 0..65535) , 如果读写的参数是数组, 此处定义数组下标。
- (3) Parameter[x].srValue : 参数值 (数值范围 : 1.175 495e-38..3.402823e+38)
- (4) Parameter[x].sdValue : 参数值 (数值范围 : -214748364810 (-2^{31}) 至 +214748364710 (2^{31}))

需要注意, 所有的 DWORD 或 DINT 类型的驱动参数都必须写入到 Parameter[x].sdValue 中。对于其他所有类型参数, 则使用 Parameter[x].srValue 。操作驱动参数前, 必须清楚待读/写参数的格式是 DWORD/DINT, 还是其他格式 (byte、word、real、INT 等)。

3 功能块使用示例

(1) 读驱动器参数

读取 SERVO_02 (AxisNo=2) 的 r0945 和 r0947 下标从 0 到 7 共 16 个参数, 在 Watch table 中进行赋值, 读取的结果如图 3-1 所示。



对 SERVO_02 (AxisNo=2) 进行参数写操作, 写入 P2587=10000 和 P2588=20000, 在 Watch table 2 中进行赋值, 如图 3-2 所示。

图 3-2 写入参数 P2587, P2588

写入结果可以从 STARTER 软件中看到：

TARTER - 20120423 - [Drive_unit_2.SERVO_02 - Expert list]

Project Edit Target system View Options Window Help

Expert list

Param.	Val.	Parameter text	Online value	SERVO_02	Unit	Modifiable to	Access level	Minimum	%
820 p2575	100	EPOS maximum deceleration	100			Ready to run	1	1	2
821 p2576	10000	EPOS jerk limiting	10000			Ready to run	1	1	3
822 p2576	0	EPOS jerk limiting activation	0			Ready to run	1	1	2
823 p2576	300000	EPOS module correction module range	0			Ready to run	1	1	2
824 p2577	0	EPOS module correction activation	0			Ready to run	1	1	2
825 p2578	0	EPOS software limit switch minus signal source	0			Ready to run	1	1	2
826 p2579	0	EPOS software limit switch plus signal source	0			Ready to run	1	1	2
827 p2580	2147483648	EPOS software limit switch minus	2147483648			Ready to run	1	1	2
828 p2581	2147483647	EPOS software limit switch plus	2147483647			Ready to run	1	1	2
829 p2582	0	EPOS software limit switch activation	0			Ready to run	1	1	2
830 p2583	0	EPOS hardware compensation	0			Ready to run	1	1	2
831 p2584	0	EPOS functions configuration	0			Ready to run	1	1	2
832 p2585	0	EPOS jog 1 setpoint velocity	0			Ready to run	1	1	2
833 p2586	0	EPOS jog 2 setpoint velocity	0			Ready to run	1	1	2
834 p2587	10000	EPOS jog 1 traversing distance	10000			Ready to run	1	1	2
835 p2588	20000	EPOS jog 2 traversing distance	20000			Ready to run	1	1	2
836 p2589	0	EPOS jog 1 reference source	0			Ready to run	1	1	2
837 p2590	0	EPOS jog 2 reference source	0			Ready to run	1	1	2
838 p2591	0	EPOS jogging incremental	0			Ready to run	1	1	2
839 p2592	0	EPOS Limitation Limit	0			Ready to run	1	1	2
840 p2593	0	EPOS Maximum velocity externally limited. Setpoint limit absolute	0			Ready to run	1	1	2
841 p2594	0	EPOS referencing start	0			Ready to run	1	1	2
842 p2595	0	EPOS set reference point	0			Ready to run	1	1	2
843 p2596	0	EPOS referencing type selection	0			Ready to run	1	1	2
844 p2597	0	EPOS reference point coordinate signal source. Position control	0			Ready to run	1	1	2
845 p2598	0	EPOS reference point coordinate value	0			Ready to run	1	1	2
846 p2599	0	EPOS search for reference reference point offset	0			Ready to run	1	1	2
847 p2600	0	EPOS flying referencing inner window	0			Ready to run	1	1	2
848 p2601	0	EPOS flying referencing outer window	0			Ready to run	1	1	2
849 p2602	1	EPOS flying referencing, positioning mode relative	1			Ready to run	1	1	2
850 p2603	0	EPOS search for reference start direction	0			Ready to run	1	1	2
851 p2604	100	EPOS search for reference approach velocity reference cam	100			Ready to run	1	1	2
852 p2605	2147483647	EPOS search for reference reference cam maximum distance	2147483647			Ready to run	1	1	2
853 p2606	1	EPOS search for reference reference cam present	1			Ready to run	1	1	2

Operating state

834 p2587	EPOS jog 1 traversing distance	10000	LU
835 p2588	EPOS jog 2 traversing distance	20000	LU

图 5-3 从 Starter 中查看参数修改