

常问问题•7/2019

Smart 200 和 G120X 的 PN 通 讯

Smart200 通过 SINA_SPEED 控制 G120X 做速度控制



https://support.industry.siemens.com/cs/cn/zh/view/109769125

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1 软件设置

使用 Smart 200 做 PN 通讯时, PLC 和 MicroWIN SMART 调试软件均需升级到 V2.4。

1.1 安装 GSDML 文件

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	Symbol Table Status Chart	Data Block	Variable Table 🔯 Cross Ref	erence 💽 Output Window	

<图 1-1 安装 G120X GSDML 文件>

选择"GSDML Management",安装需要进行通讯的 G120X 所对应版本的 GSDML 文件。

1.2 PROFINET 向导配置

(1) 激活 PROFINET controller, 点击 next。

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Project4 (C:\Users\Public\Do //	1 Network Comment	PROFINET Configuration Wizard	
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😥 🔛 Program Block		CPU ST20(smart200)	Introduction
🕀 🧰 Symbol Table		- TI SINAMICS G120 C02505-2 P	This winned allows you be applying a property when he was a the DOCENET as Service is associated and should be the
Status Uhart	M0.1	DO VECTOR(1)	mis water allows you to compare a record the there was step by step. The record termination is generated and stored in the project.
Sustem Block		Completion	
F Cross Reference			
- 🖳 Communications	MU.2		
🖻 📉 Wizards		1	PLC Role
- K Motion			Select a role for the PLC.
PID PID			
- R PWM			PROFINET controller
🕂 Text Display			
GET/PUT			
C PROFINET			
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modbus RTU Slave (Modbus RTU Slave (7MD10		
Machus TCR Cleant (u	8 MW14	- oigneu	

<图 1-2 激活 PROFINET controller>

(2) 输入 PLC 的 IP 地址和子网掩码;添加需要控制的 G120X 从站的 GSDML 文件,注意 要和实际的变频器版本一致;对新添加的 G120X 设备输入 IP 地址和设备名称,注意这里输 入的地址和名称需要和实际的 G120X 当前的 IP 地址设备名称一致;最后点击"next"。

PROFINET Configuration Wizard		X
PROFINET network GPU ST20(smart200) GPU ST20(smart200) GPU STANMICS G120X PN V1.0V1 GTURE(1) GRUPE(1) Grupletion	g120x(1)	PROFINET-IO Drives Sistemens AG SINAMICS SINAMICS SINAMICS 6120 CU2505-2 PN Vector SINAMICS 6120 CU2505-2 PN Vector SINAMICS 6120 CU2505-2 PN Vector
	Controller parameters Ethernet Port I> 10 address: 192.168.0.6 Liberat Bort subnet Mask: 225.255.255.0 Default 0.0.0.0 Device table	< السبب به معنی محکم می
	Device Number Type Device Name IP Address Comments	Version:
	1 SINAMICS G120X PN V1.0 g120x 192.168.0.10	GSDML-V2.34-Siemens-Sinamics_G120X-20180814
		Description: GSDML-V2.34-Siemens-Sinamics_G120X- 20180814.xml IO device SINAMICS G120X PN V1.0 with PORCHECT to between PD TTT and each
		cyclic communications)
	Add Delete	~
- III	< Previous Next > Generate Cancel	

<图 1-3 PLC 和 G120X 的 IP 地址配置>

(3)选择所需要的报文,点击"Add";设置报文发送和接收的起始地址。由于使用 SINA_SPEED 块需要使用标准报文 1,所以在这里添加"Standard telegram 1, PZD-2/2"。

NET network U ST20(smart200) STNAMICS G10X PN V1.0V1.00-g120x - STNAMICS G120X PN V1.0(0) - DRIVE(1) mpletion	Click th	e "Add" Index 0 1 	button to add a module for thi Module Name SINAMICS G120X PN V1.0 DRIVE	s device. Submodule Name PN-I0 Port 1 Port 2 Module Access Point without PROF1safe Standard telegram 1, FZD-2/2	Stot_Substot 0 32768pc150) 0 32769pc150. 0 32770pc15 1 1 1 1 1 2 1 3 1 4	PNI Start A	SINAMICS G120X PN V1.0V1.00 Head module SINAMICS G120X PN V1.0 Module Submodule Submodule Submodule Submodule Module Access Part Module Access Point Module Access Point Module Access Point Standard telegram 1.P2D-2/6 SIEMBNS telegram 352, P2D-4/6 SIEMBNS telegram 352, P2D-4/6 SIEMBNS telegram 352, P2D-4/6 SIEMBNS telegram 354, PKW+P2D-6/6 Free telegram, P2D-6/6 Free telegram, P2D-6/6
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- DRNE(1) mpletion	1 2 3 4 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		SINAMICS G120X PN V1.0	PN-I0 PN-I0 Port 1 Port 2 Module Access Point without PROFIsafe Standard telegram 1, PZD-2/2	0 0 32768pc150) 0 32769pc15 0 32770pc15 1 1 1 1 1 2 1 3 1 3 1 4	128	ORIVE Submodule Supplementary data, P2D-2/2 Supplementary data, P2D-2/4 Supplementary data, P2D-2/4 Supplementary data, P2D-2/6 module Access Point without PROFIsate Fistandar telegram 32, P2D-2/6 SEMENS telegram 352, P2D-4/4 SEMENS telegram 353, PXW+P2D-2/2 SEMENS telegram 353, PXW+P2D-2/6 Free telegram, P2D-6/6 Free telegram, P2D-6/6 Free telegram, P2D-6/6
mpletion	2 3 4 5 7 8 9	- - - -	DRIVE	PN40 Port 1 Port 2 Module Access Point without PR0F1safe Standard telegram 1, PZD-2/2	0 32768p(150) 0 32768p(150) 0 32769p(15 0 32770p(15 1 1 1 1 1 1 2 1 3 1 4	128	 Submodule Supplementary data, P2D-2/2 Supplementary data, P2D-2/4 Supplementary data, P2D-2/6 empty submodule Module Access Point Without PROFIsation Standard telegram 31, P2D-2/6 SIEMMINS telegram 330, P2D-4/4 SIEMMINS telegram 330, P2D-4/4 SIEMMINS telegram 330, P2D-4/4 SIEMMINS telegram 337, PX0-6/6 SIEMMINS telegram 354, PKW+P2D-6/6 Free telegram, P2D-6/6 Free telegram, P2D-6/6 Free telegram, P2D-1/212
	3 4 5 6 7 8 9		DRIVE	Port 1 Port 2 Module Access Point without PROFIsate Standard telegram 1, PZD-2/2	0 32759(X15 0 32770(X15 1 1 12 13 14	128	 Supplementary (date, PZD-2/2 Supplementary (date, PZD-2/4 Supplementary (date, PZD-2/6 empty submodule Module Access Point Without PROFIgate Estendiard telegram 1, PZD-2/2 SIEMediard telegram 20, PZD-2/6 SIEMENS telegram 332, PZD-6/6 SIEMENS telegram 354, PKW-4PZD-2/2 SIEMENS telegram 354, PKW-4PZD-6/6 Free telegram, PZD-6/12 SIEMENS telegram 354, PKW-4PZD-6/6 Free telegram, PZD-6/12
	4 5 5 6 7 7 8 7 9 7	 	DRIVE	Port 2 Module Access Point without PR0FIsafe Standard telegram 1, PZD-2/2	0 32770×15 1 11 12 13 14	128	- Supplementary data, P2D-2/6 - enpty submit P2D-2/6 - enpty submit P2D-2/6 - enpty submit P2D-2/6 - submit elegran 2, P2D-2/6 - SIEMENS telegran 352, P2D-4/4 - SIEMENS telegran 352, P2D-4/6 - SIEMENS telegran 353, P(W+P2D-2/2 - SIEMENS telegran 353, P(W+P2D-2/6 - Free telegran, P2D-6/6 - Free telegran, P2D-6/6
	5	1 	DRIVE	Module Access Point without PROFIsafe Standard telegram 1, PZD-2/2	1 11 12 13 14	128	- empty submodule - Module Access Point - without PROFlaste Gtandard telegram 1, P2D-2/2 - SIEMENS telegram 350, P2D -4/4 - SIEMENS telegram 350, P2D -4/4 - SIEMENS telegram 354, PKW +P2D -2/2 - SIEMENS telegram 354, PKW +P2D -6/6 - Free telegram, P2D -6/6 - Free telegram, P2D -1/2/2
	6 7 7 7 8 7 9 7			Module Access Point without PROFizafe Standard telegram 1, PZD-2/2	11 12 13 14	128	
	7	••		without PROFIsafe Standard telegram 1, PZD-2/2	12 13 14	128	
5	8	••		Standard telegram 1, PZD-2/2	13	128	District Unit Vectorial - Standard Vectorial - StemBNS telegram 350, P2D-4/4 - SIEMBNS telegram 352, P2D-6/6 - SIEMBNS telegram 352, P2D-6/6 - SIEMBNS telegram 352, PXD-6/6 - Free telegram, P2D-6/6 - Free telegram, P2D-6/6
5	9	•			14		- SIEMEINS telegram 350, P2D-4/4 - SIEMEINS telegram 352, P2D-4/4 - SIEMEINS telegram 352, P2D-6/6 - SIEMEINS telegram 354, PKW+P2D-6/6 - Free telegram, P2D-6/6 - Free telegram, P2D-6/6
							 SIEMENS telegram 352, PZD-6/6 SIEMENS telegram 353, PKW+PZD-2/2 SIEMENS telegram 354, PKW+PZD-6/6 Free telegram, PZD-6/6 Free telegram, PZD-12/12
	Add		III Delete Update Time (ms)	4.00 V Data Hold	3 💌	,	Free telegram, P2D-8/8 Article no.: Version: Description: Standard telegram 1: Closed-loop speed control, P2D length 2/2 words *

<图 1-4 G120X 报文配置>

(4) 向导的最后一步会总结当前从站的一些通讯参数,最后点击"Generate"。

<图 1-5 G120X 通讯参数>

(5) 关于 G120X 的调试,需要注意 P15=57, "PROFINET 控制"。

2 使用 SINA_SPEED 控制变频器

2.1 SINA_SPEED 管脚定义

参数	输入/输出	数据类型	描述
EnableAxis	IN	BOOL	"EnableAxis" = 1 -> 启动驱 动
AckError	IN	BOOL	为1时确认故障
SpeedSp	IN	REAL	速度设定值。速度设定值会 随着参考转速改变而改变; 例如,参考转速是 1000rpm,速度设定值的范 围是(0,1000rpm)
Refspeed	IN	REAL	驱动参考转速。数值范围是 (6,210000rpm)
ConfigAxis	IN	WORD	没有直接在块中定义的一路 输入;具体参考"ConfigAxis" 的详细信息(缺省值为0)
Starting_I_add	IN	DWORD	PROFINET IO: 指向 I 存储 区的指针起始地址
Starting_Q_add	IN	DWORD	PROFINET IO: 指向 Q 存储 区的指针起始地址
AxisEnabled	OUT	BOOL	驱动已使能
Lockout	OUT	BOOL	1=接通禁止
ActVelocity	OUT	REAL	实际速度,跟参考转速相关
Error	OUT	BOOL	1 =组错误

<表 2-1 SINA_SPEED 管脚定义>

2.1.1 ConfigAxis 位定义

ConfigAxis	含义
Bit0	OFF2
Bit1	OFF3
Bit2	使能运行
Bit3	使能斜坡函数发生器
Bit4	继续斜坡函数发生器
Bit5	使能速度设定值

Bit6	运转方向
Bit7	强制打开报闸
Bit8	MOP 设定值增加
Bit9	MOP 设定值减小
Bit10	预留
Bit11	预留
Bit12	预留
Bit13	预留
Bit14	预留
Bit15	预留

<表 2-2 ConfigAxis 位定义>

2.2 SINA_SPEED 应用实例-控制变频器启动及速度给定

参数管脚	参数值	描述
SpeedSp	200	设定转速
RefSpeed	1500	参考转速
ConfigAxis	16#003F	
Starting_I_add	&IB128	I存储区起始地址指针
Starting_Q_add	&QB128	Q存储区起始地址指针

<表 2-3 SINA_SPEED 管脚参数值>



<图 2-1 SINA_SPEED 启动变频器前在线监控值>

其余参数不变,将 EnableAxis 设置为 1;之后变频器将启动运行,实际速度将按照设定斜坡上升到设定转速,下图中可以看到,当实际转速到达设定转速时,ActVelocity 显示 200.0427rpm。



<图 2-2 SINA_SPEED 启动变频器后在线监控值>