如何使用 STARTER 软件通过 USB 接口 在两台或多台变频器之间拷贝参数?

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警告

本文描写的功能和解决方法仅限实现自动化任务。当您的设备连接到工厂其他位置,企业内网络或英特网,请考虑相应的工业安全保护指标。更多信息可参考文档 50203404.

http://support.automation.siemens.com/WW/view/en/50203404

问

如何使用 STARTER 软件通过 USB 接口在两台或多台变频器之间拷贝参数?

答

本文所列举的说明和注意事项提供了本问题的详细答案。

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1 先决条件

1.1 设备和软件

不使用存储卡,在两台甚至多台变频器之间克隆参数之前,必须满足下面条件:

- STARTER 调试软件已经完整地安装于 PC。
- 有一条 Mini USB 电缆。
- 有至少两台已完整安装并工作的变频器,供调试使用。
- 注意 确保您使用的是最新版本的 STARTER 并且兼容控制单元的固件版本。

2 拷贝参数

下面详细流程演示了使用 STARTER 软件在两台或多台变频器之间克隆参数。

2.1 设置第一台变频器参数

- 1. 确认使用 mini USB 电缆将 PC 机的 USB 接口和变频器控制单元的 USB 接口连接起来;
- 2. 启动 STARTER 软件;
- 3. 在 STARTER 软件中新建一个项目;

图 2-1

New Project	×			
User projects				
Name	Storage path			
Atlas Copco SN1288756 Atlas Copco SN1288756 Atlas Copco SN1288766 Atlas Copco SN1288766 DIEMME PM250 USA G1100_1	C:\1-2463834205\SN1288756_APF C:\1-2463834205\SN1288756_APF C:\1-2463834205\SN1288756_APF C:\1-2463834205\SN1288766_APF C:\4rcgram Files\Siemens\Step7\s7 C:\4rcgram Files\Siemens\Step7\s7 C:\4rcgram Files\Siemens\Step7\s7 C:\4rcgram Files\Siemens\Step7\s7			
Name:	Туре:			
STARTERclone1				
Storage location (path): C:\Program File S\Step7\s7proj Browse OK Cancel Help				

- 4. 输入一个项目名称并点击 OK;
- 5. 点击"Accessible nodes" 查找已连接到的变频器;

STARTER - STARTERclane1 - [Accessible nodes - S7USB]	
🎬 Project Edit Targetsystem View Options Window Help	
	<mark></mark>
STARTERcione1	OP_2_DP (Serial number = XAC7 ype = SINAM CS CU230F 2 DP V4.4)

- 6. 选择需要连接的结点;
- 7. 点击"Accept" 接受所选站点;
- 8. 关闭接受对话框;
- 9. "online/offline" 对比对话框将不再显示;

对比对话框被初始化,因为变频器内存储的参数与 STARTER 软件内存储的参数 不同。

- 10. 点击 "Load HW configuration to PG"按钮;
- 11. 点击"Close";

图 2-3		
	Online/offline comparison	
	The online configuration of G120_CU230P_2_DP (SINA project saved offine.	MICS CU230P 2 DP V4.4) differs from the
	CU type PM type PM240	
	Adjust via: Note	
C120. CU220D. 2. D.D.	Load HW configuration to PG can remo	loading of the hardwate configuration esult in parameters being added or ved.
DEVICE (STABTER SCHUT) -> S7USB		

12. 在左侧的项目结构栏中找到并选择"Expert List";



在本例中我们将直接在参数专家列表通过修改参数 P0015 选择宏 12,

- 13. 选择参数 P0010 并设置为 1; [P0010=1]
- 14. 选择参数 P0012 并设置为 12. [P0015=12]
- 15. 选择参数 P0010 并设置为 0 [P0010=0]
- 16. 点击"Upload" 按钮将参数上传至 PC [1].
- 17. 点击 "Yes" 确认上传 [2]

STARTER STARTERclane1 [G120	0_CU230P_2_DP.Conirol_Unit Expert list]
Project Edit Targetsystem View Op	tions Window Help
	2 - M XX
STARTERclone1	📑 📴 🛤 🛐 🕴 Enter search 🍋 🗨 🛤 🕴 Y 🛅 🔄 hexadecimal 🗨 🖼
nsert single drive unit	Expert list 1
GI20_C0230P_2_DP	⊕ Param Data Parameter text
> Expert list	1 r2 Drive operating display
Drive pavigator	2 p3 Access evel
G = Inputs/outputs	Load to PG (WWBS:887)
Section connet Soperational and the section of the sectio	The data will be loaded to the you want to start the loading operation?
	Yes No
Documentation	12 r25 CC: Output voltage smoothed
E inamics libraries	13 r26 CO: DC link voltage smoothed

- 18. 当上传结束, 将弹出对话框显示"The data has been successfully load to the PG";
- 19. 关闭该对话框;
- 20. 保存项目;

图 2-6

📽 STARTER - STARTERclane1 - [G120_CU230P_2_DP.Control_Unit - Expert list]							
Troject Edit Target system View Options Window Help							
	💽 📴 🙀 📔 Enter search text 🔍 🏘 🕴 Y 📴 🕴 hexadecimal 🔍 🚭						
	Expert list						
GIZE_CU230P_Z_DP	⊕ Param Data Parameter text						
> Expert list	1 r2 Drive operating display						
💥 Drive navigator	2 p3 Access level						
S Inputs/outputs	3 p4 Display filter						
🗉 ≫ Setpoint channel	4 p10 Drive commissioning parameter filter						
⊡ ≫ Open-loop/dosed-loop	5 p14 Buffer memory mode						
	6 p15 Macro drive unit						
🗉 ≫ Messages and monitorii	7 r18 Control Unit Firmware-Version						
	8 r20 Speed setpoint smoothed						
😥 ≫ Commissioning	9 r21 CO: Actual speed smoothed						
🗉 ≫ Communication	10 r22 Speed actual value rpm smoothed						
	11 r24 Output frequency smoothed						
😟 🛄 Documentation	12 r25 CO: Output voltage smoothed						

21. 用工具栏上的断开按钮断开变频器与 STARTER 之间的连接;

图 2-7							
STARTER STARTERclone1 [G120_CU230P_2_DP.Control_Unit - Expert list]							
📱 Project Edit Targetsystem View Op	otions Window Help						
STARTERclone1		Ente Disconnect from target system					
nsert single drive unit	Expert list						
G12U_CU23UP_2_DP	⊕ Param	Data Parameter text					
Control_Onic		A V AI					
> Expert list	1 r2	Drive operating display					
	2 p3	Access level					
	3 p4	Display fitter					
Setroipt chappel	4 p10	Drive commissioning parameter fiter					
Sopen-loop/dosed-loop	5 p14	Buffer memory mode					
Functions	6 p15	Macro drive unit					
🐨 🊿 Messages and monitori	7 <mark>r10</mark>	Control Unit Firmware-Version					
Technology controller	8 <mark>r20</mark>	Speed setpoint smoothed					
🗉 🚿 Commissioning	9 <mark>r21</mark>	CO: Actual speed smoothed					
Communication	10 r22	Speed actual value rpm smoothed					
🗉 ≫ Diagnostics	11 r24	Output frequency smoothed					
Documentation	12 r25	CO: Output voltage smoothed					
🗄 🧰 SINAMICS LIBRARIES	13 r26	CO: DC link voltage smoothed					
	14 r27	CO: Absolute actual current smoothed					
_	15 r31	Actual torque smoothed					

22. 弹出设备不在线对话框;



23. 点击 "Close"关闭。

2.2 将参数拷贝至第二台变频器

- 1. 使用 mini USB 电缆将第二台变频器与 PC 机连接起来;
- 2. 在 STARTER 软件中点击"Accessible nodes";

图 2-9								
STARTER STARTERclone1 [G120_CU230P_2_DP.Control_Unit - Expert list]								
📱 Project Edit Targetsystem View Op	🖥 Project Edit Targetsystem View Options Window Help							
STARTERcione1		Enter search text 🗨 🏘 🛛 🖉 🎦 🖂 🖂						
nsert single drive unit	Expert list							
G12U_CU23UP_2_DP	⊕ Param	Data Parameter text						
	Al 💌	A 📕 All						
	1 r2	Drive operating display						
Expert list	2 p3	Access level						
Trive navigator	3 p4	Display fiter						
S Inputs/outputs	4 p10	Drive commissioning parameter fiter						
I ≫ Setpoint channel	5 p14	Buffer memory mode						
+ >> Open-loop/dosed-loop	6 p15	Macro drive unit						
Functions	7 <mark>r10</mark>	Control Unit Firmware-Version						
+ > Messages and monitori	8 <mark>r20</mark>	Speed setpoint smoothed						
🕂 厳 Technology controller	9 <mark>r21</mark>	CO: Actual speed smoothed						
∓ ≫ Commissioning	10 r22	Speed actual value rpm smoothed						
T S Communication	11 r24	Output frequency smoothed						
Interpretation → Diagnostics	12 r25	CO: Output voltage smoothed						
Documentation	13 <mark>r26</mark>	CO. DC link voltage smoothed						
E in Sinamics Libraries	14 r27	CO: Absolute actual current smoothed						
	15 r31	Actual torque smoothed						
	16 <mark>r32</mark>	CO: Active power actual value smoothed						

3. 不要选择 STARTER 主窗口中 Accessible Nodes 树形结构下显示的变频器;

图 2-10



4. 点击工具栏 "connecto to selected target devices" 按钮;



- 5. 弹出"Assign Target Devices" 对话框;
- 图 2-12

STARTER STARTERclane1 [Acce	issisla nodas \$7.50]				
Project Tolk Target system Very Op	con Vrder He ⊐ N N XIXI Sassi + a a Si III 80		lais		leleli
By STANTERCONSE Description Description Configuration Configura	Statesesible rode:	- SINAMICS CU238P-2 DP-Y4.4)			
S >> Setpart dwnel		8 Assign Target Devices			
 I D Open scop (conset) cop I D Functors 		Unassigned devices		Assigned devices	
Message and motion		B B (CLARTRICKE)		Target device in the project	Accessible node: G120_CU230P_2_DP (Serial
	Extended satings Extended satings DEVICE (STARTER, SCOUT) Interface coameteixation used. S7USB IP-addess of the aught node.	R 🔮 Accessible rodds - 🛃 G120_CU200P_2CP (Swind number - WC			
Project	Do you want to accept the selected date units into the poject? Accept Select dive units Update Example Select dive units Update	Current presidection Current presidection Current project Accessible nodes:			
Information Establishing a com Exer G120_CU230P_2_ Exer Error on: Connect to Error Invalid parameter (r	vection to device 'G 120_CU230P_2_DP' DPE fine accurated while establishing a connection to device 'G120_CU230P_2, o valected target devices. et = 0xbe/b000c)	Connect to assigne	d devices	Cancel	Heb

- 6. 点击 "Connect to assigned devices" ——变频器在 STARTER 软件上线;
- 7. 点击工具栏 download 图标按钮;

图 2-13								
STARTER - STARTERclone1 - [G120_CU230P_2_DP.Control_Unit - Expert list]								
📱 Project Edit Targetsystem View Op	tions Window Help							
		: <mark>- ::::::::::::::::::::::::::::::::::</mark>						
Target system Y 🔄 🔸 🌬 Enter s 🗸 😽 🖓 🚱								
🖻 🕂 🗊 G12D CU230P 2 DP								
🖃 📥 🏚 Control Unit	⊕ Param I	Data Paramete						
Configuration	🛛 🔀 Ali 🖃 /	A 🗾 All						
> Expert list	1 <mark>r2</mark>	Drive operating display						
🛛 💥 Drive navigator	2 p3	Access level						
S Inputs/outputs	3 p4	Display filter						
🗉 ≫ Setpoint channel	4 p10	Drive commissioning parameter fiter						
🗉 ≫ Open-loop/dosed-loop	5 p14	Buffer memory mode						
🗉 ≫ Functions	6 p15	Macro drive unit						
🕀 ≫ Messages and monitori	7 <mark>r18</mark>	Control Unit Firmware-Version						
🗉 ≫ Technology controller	8 <mark>r20</mark>	Speed setpoint smoothed						
😟 ≫ Commissioning	9 <mark>r21</mark>	CO: Actual speed smoothed						
🗉 ≫ Communication	10 <mark>r22</mark>	Speed actual value rpm smoothed						
🕀 ≫ Diagnostics	11 r24	Output frequency smoothed						
🗄 🛄 Documentation	12 r25	CO. Output voltage smoothed						
E SINAMICS LIBRARIES	13 r26	CO: DC link voltage smoothed						
	14 r27	CO: Absolute actual current smoothed						
	15 r31	Actual torque smoothed						
	16 r32	CO: Active power actual value smoothed						
	17 r34	CO: Motor utilization						
	18 r35	CO: Motor temperature						
	19 r36	CO: Power unit overlaad 12t						
	20 r39	Energy consumption						
	21 p40	Reset energy consumption display						
	22 r41	Energy usage saved						
	23 p45	Smoothing time constant, display values						
	24 1140	COVEO, Missing enable sig						
	20 (47	COPO: Command Date Set CDS effective						
	20 ⊕130	CORO: Drive Bate Set DDS effective						
	27 ⊕r51	COBO: Drive bala set DDS enective						
	20 mr53	COBO: Status word 2						
	20 ⊕r54	COBO: Status word 2						
	31 @r55	CO/BO: Supplementary control word						
	32 @r%	COBO: Status word, closed-loon control						
	33 460	CO: Sneed settoint before the scholint filter						
Desire at								
Fiolect	Control_Unit							
8								
Device Operating state								
G120_CU230P_2_DP.Control_Unit	G120_CU230P_2_DP.Control_Unit Switching on inhibited - set "OC/DFF2" = "1" (p0844, p0845)							

8. 弹出下载对话框;





注意 确认勾选 "After loading, copy RAM to ROM"。

- 9. 点击"Yes" 开始下载;
- 10. 将会有一个进度条显示下载状态;

在 STARTER 的信息显示区将显示出下载已成功完成。

图	2-15	
×	Level	Message
	Information Information Information Information Information	Download to target system The following devices are not consistent online: G120_CU230P_2_DP. G120_CU230P_2_DP: Checking the TO configuration G120_CU230P_2_DP: Download completed Download to target system completed successfully G120_CU230P_2_DP: Copy RAM to ROM performed successfully.
	Alarmo 🔛	Target system output 🛛 🖽 Load to PG output 🕽 🖽 Comple/check output 🛛 🏠 Diagnostics overview