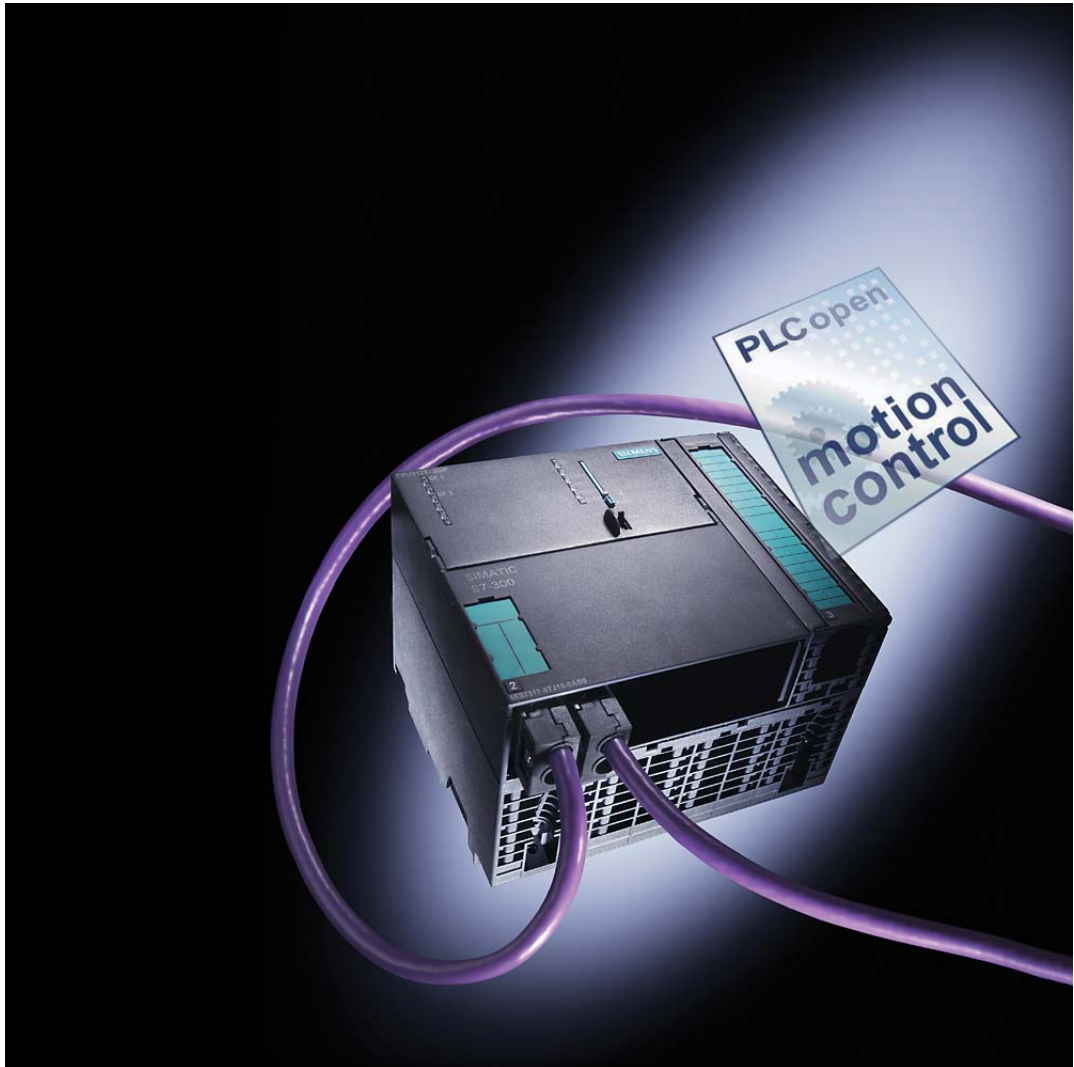


SIMATIC S7-300 T-CPU

1. SIMATIC S7-300 T-CPU 概述

1.1. SIMATIC S7-300 T-CPU 简介

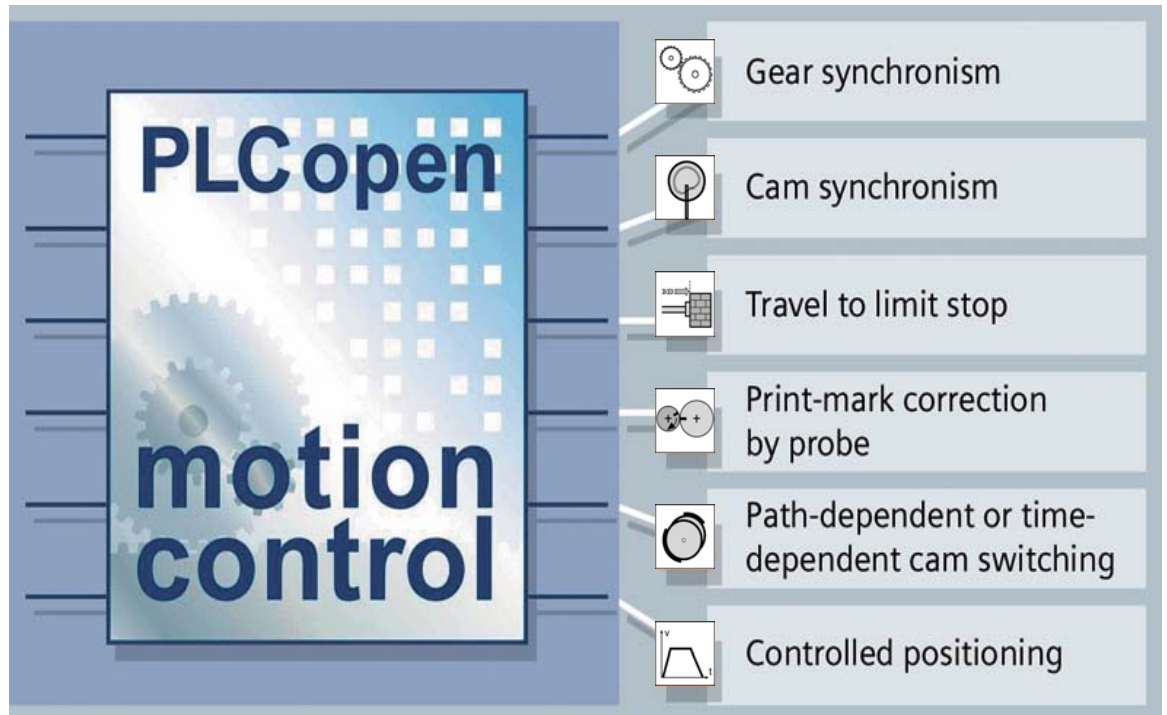


最近几年，机器和设备制造商面临着越来越严苛的挑战，需要提供更为灵活、高效的机器设备，同时又需要更低的价格。结果，对成本优化的机电一体化解决方案的需求越来越迫切，以用于全新设计。越来越多的机械刚性耦合轴，也随之由单独驱动的传动轴所取代。这将延伸自动化任务在更加广泛运动

控制领域的应用，以及工艺技术领域中的应用。同时，拥有强大功能和广博众长的自动化系统将付诸应用生产机械设备。

具有运动控制功能的**SIMATIC T-CPU** 自动化系统，可以应用于绝大多数自动化生产机械设备运动控制任务中。不仅实现了SIMATIC S7-300 PLC功能，而且实现了运动控制功能。利用PROFIBUS 连通性，组成了分布式驱动系统的自动化与驱动完美结合。一种可以广泛用于自动化生产机械设备的最先进、创新的自动化与驱动系统的解决方案，随之而生。**SIMATIC T-CPU** 自动化系统的解决方案，不但具有容易实现自动化生产机械设备生产工艺的优点，而且颇具开发成本优势。采用这种创新性的**SIMATIC T-CPU** 自动化解决方案，必将有效地帮助客户提高经济收益，同时帮助客户增强产品的市场竞争力。

SIMATIC T-CPU 自动化系统可以典型用于3轴到8轴，最多32轴的自动化生产机械中。除了准确的单轴定位功能以外，**SIMATIC T-CPU** 适用于复杂的多轴同步运动控制工序。例如，多轴链接，形成虚拟主轴、或者实际主轴间的同步运动控制。



利用 **SIMATIC T-CPU** 现成的运动控制功能块，用户可以轻松地实现：印刷标记修正，电子齿轮同步控制，凸轮盘同步控制，凸轮开关输出，行进到预定义的限位点，定位控制，等等。



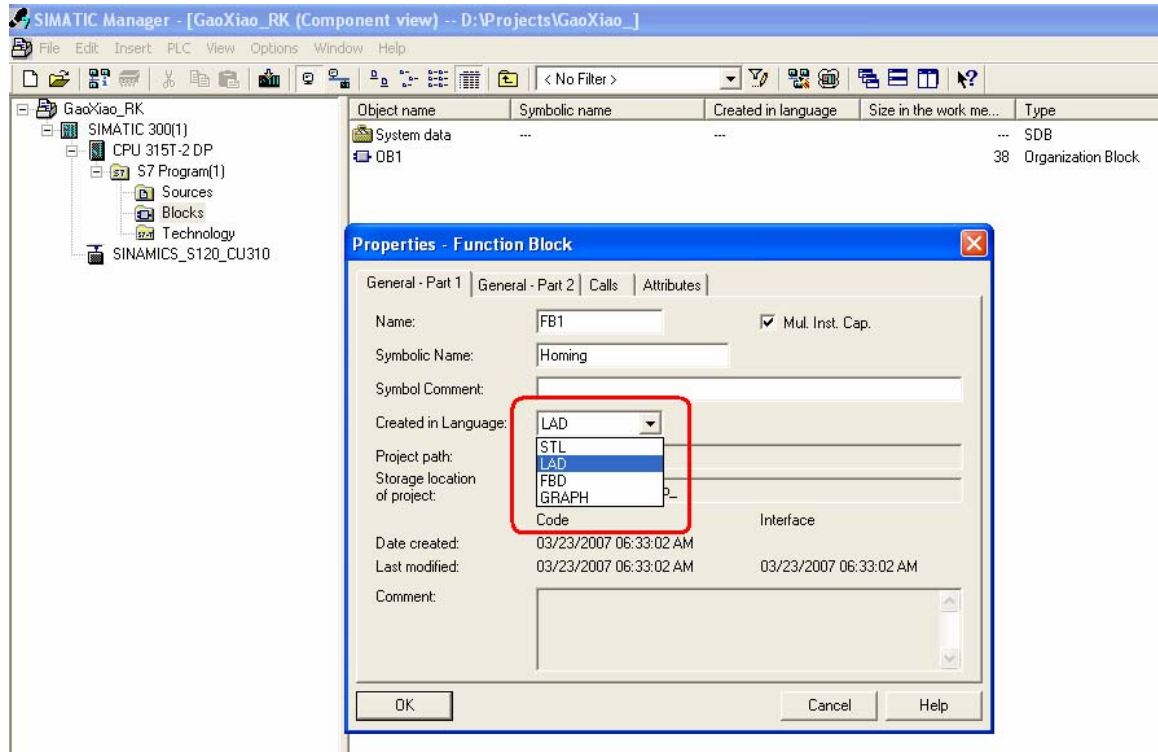
SIMATIC T-CPU 具有两个集成的PROFIBUS 接口：

- **MPI/DP 接口。**用于连接其他的 **SIMATIC** 组件，例如，编程器、HMI，等等。如果用作**DP**接口，还可以连接 **S7** 控制器，分布式**I/O**，建立更为广泛的 **DP** 网络。
- **DP (DRIVE) 接口。**用于连接驱动器组件。还可以采用 **DP** 的等时特性，实现高性能的多轴同步控制任务，高质量地实现快速生产工艺任务。

1.2. SIMATIC S7-300 T-CPU 技术优势

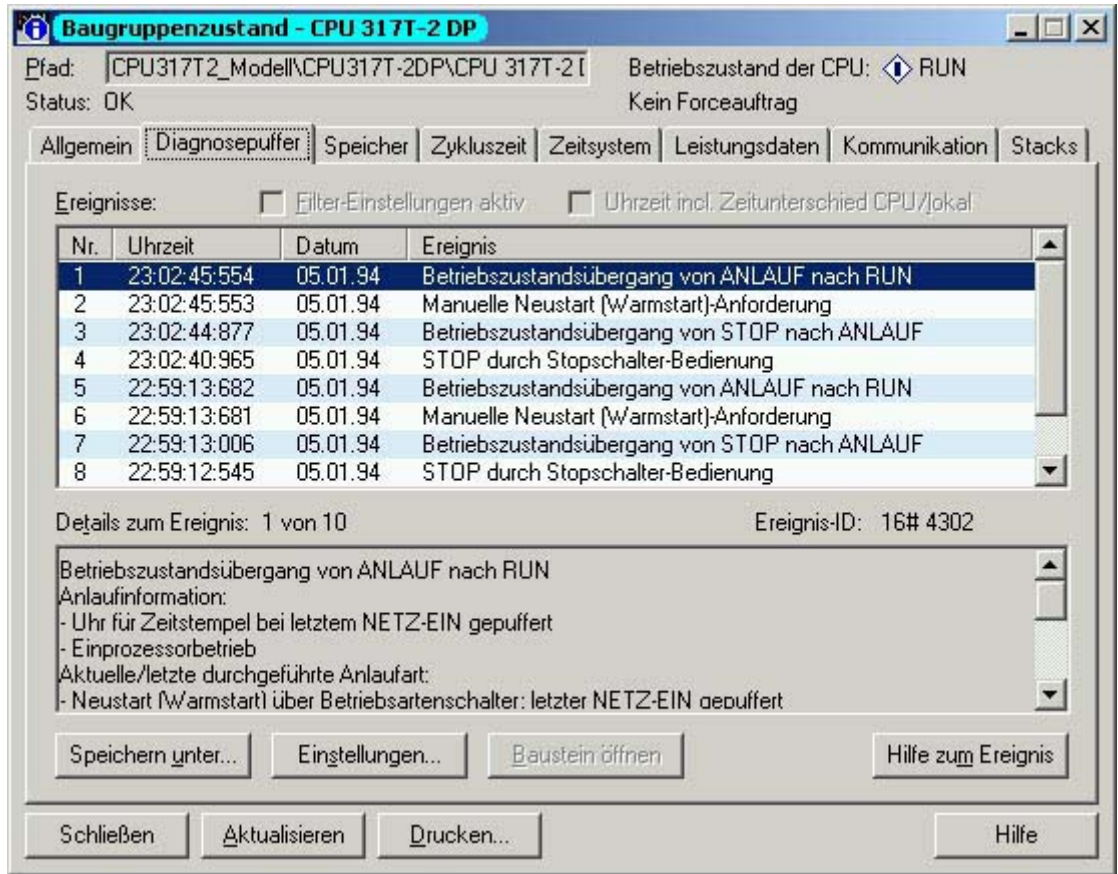
I. 用于运动控制的SIMATIC T-CPU 是一个标准的SIMATIC S7-300

CPU:



- 所有用于S7-300/400 的STEP 7 编程语言，都适用于**T-CPU**。例如，LAD, STL, FBD, S7-SCL, CFC, SFC, S7-Graph;
- PLC 工程师多年在现场积累的、经过现场调试考验的PLC 程序工艺块 (FB/FC) ，可以完整地经过拷贝，继续在**T-CPU** 中继续使用。例

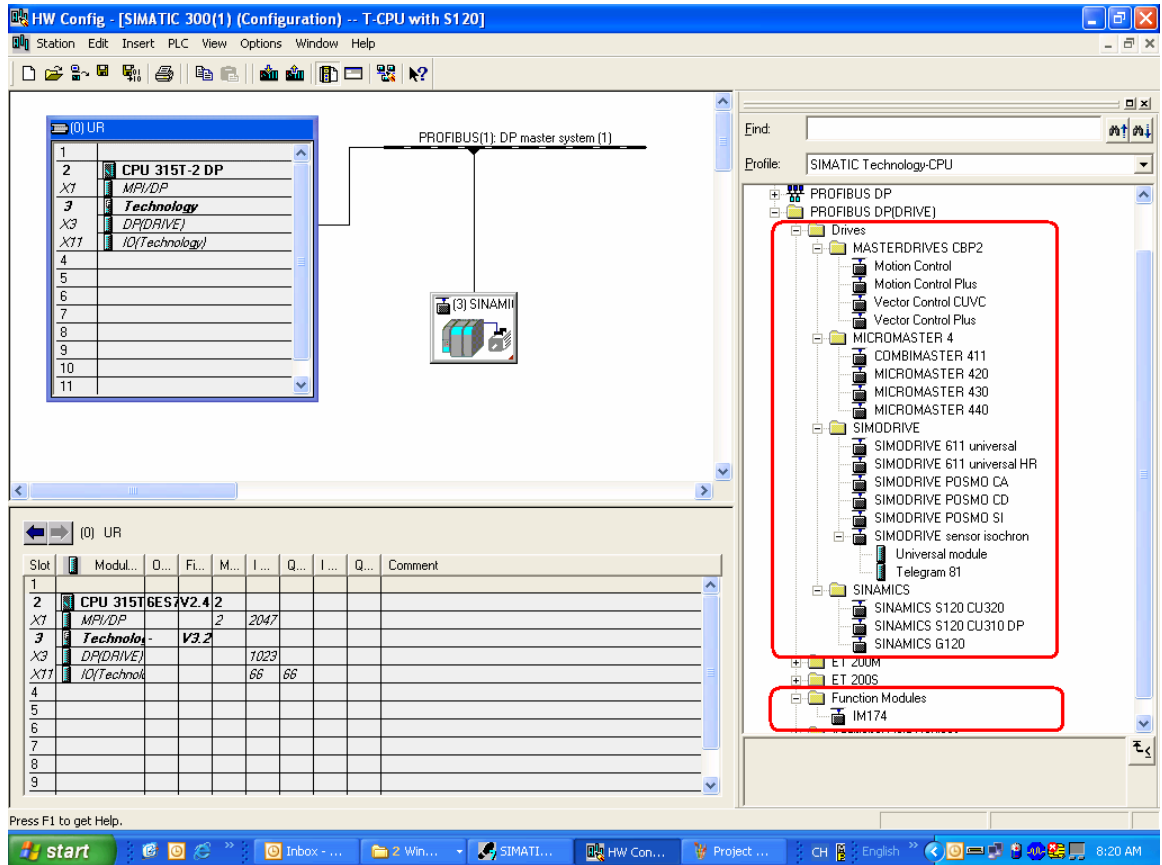
如，PID 控制，张力控制，指针寻址，等等；



- c) **T-CPU** 具有统一的 SIMATIC 诊断工具，实时位置轨迹跟踪调试工具，方便用户的使用；
- d) **T-CPU** 具有强大的 SIMATIC 工业通讯平台。用户可以非常轻松的完成 SIMATIC 工业通讯网络拓扑；
- e) **T-CPU** 的微存储卡（MMC 卡）功能，允许自动化系统的免维护运行，无需后备电池，用户程序的更新过程更是大大简化。同时，MMC 卡还可以存储用户完整的工程项目，包括用户程序、硬件配置、符号表、工程注释及参数，等等。

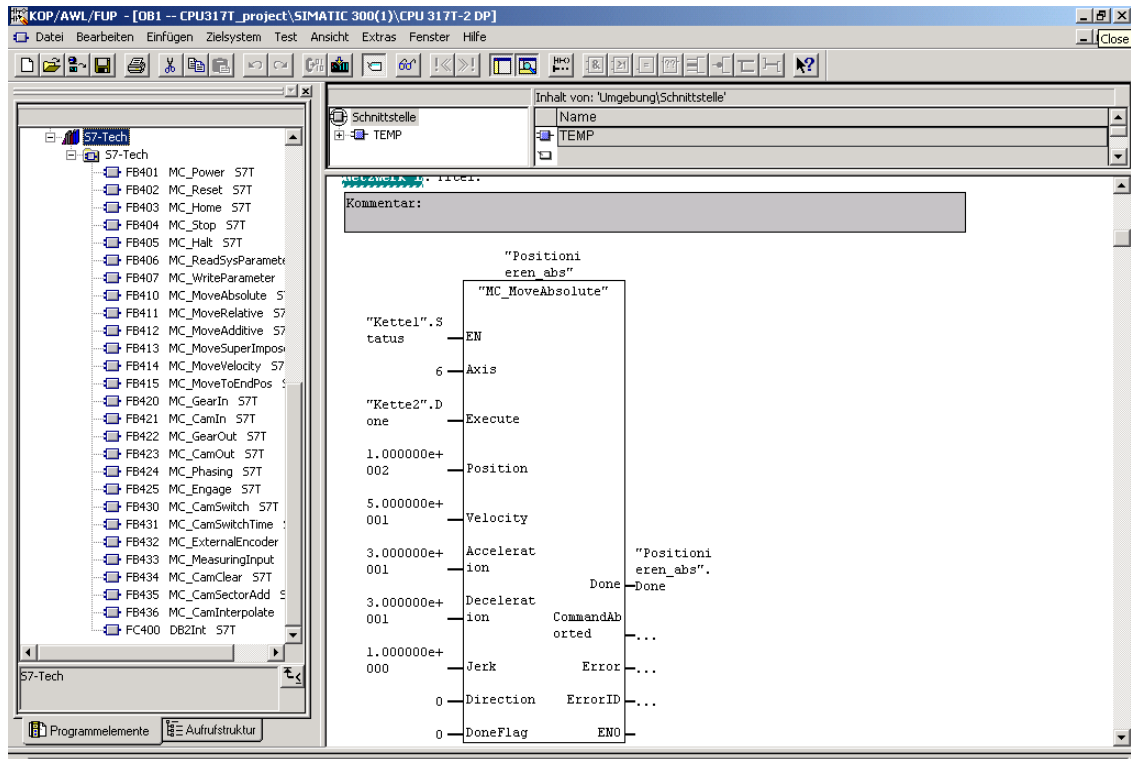
II. **T-CPU** 是集成了 SIMATIC S7-300 CPU 和 SIMOTION 运动控制器内核的标准 SIMATIC S7-300 CPU。S7-300 CPU 与运动控制器 SIMOTION 之间的数据交换，由 **T-CPU** 硬件完成，无需要工程师额外编制 PLC 程序，节约了用户

的开发成本，大大节省了系统的编程、调试和维护时间。



III. 运动控制开发任务中，电气工程师面临的主要工作任务：1) **SINAMICS S120**伺服驱动器参数的调试，2) 运动控制程序的编制，3) **PLC** 逻辑控制程序的编制。**T-CPU** 连接**SINAMICS S120**的硬件配置，使电气工程师完成这些控制任务时，完全是在工程师所熟悉的**STEP 7** 软件平台上解决。工程师不

需要学习其他的编程语言，就可以胜任复杂的运动控制工艺任务。



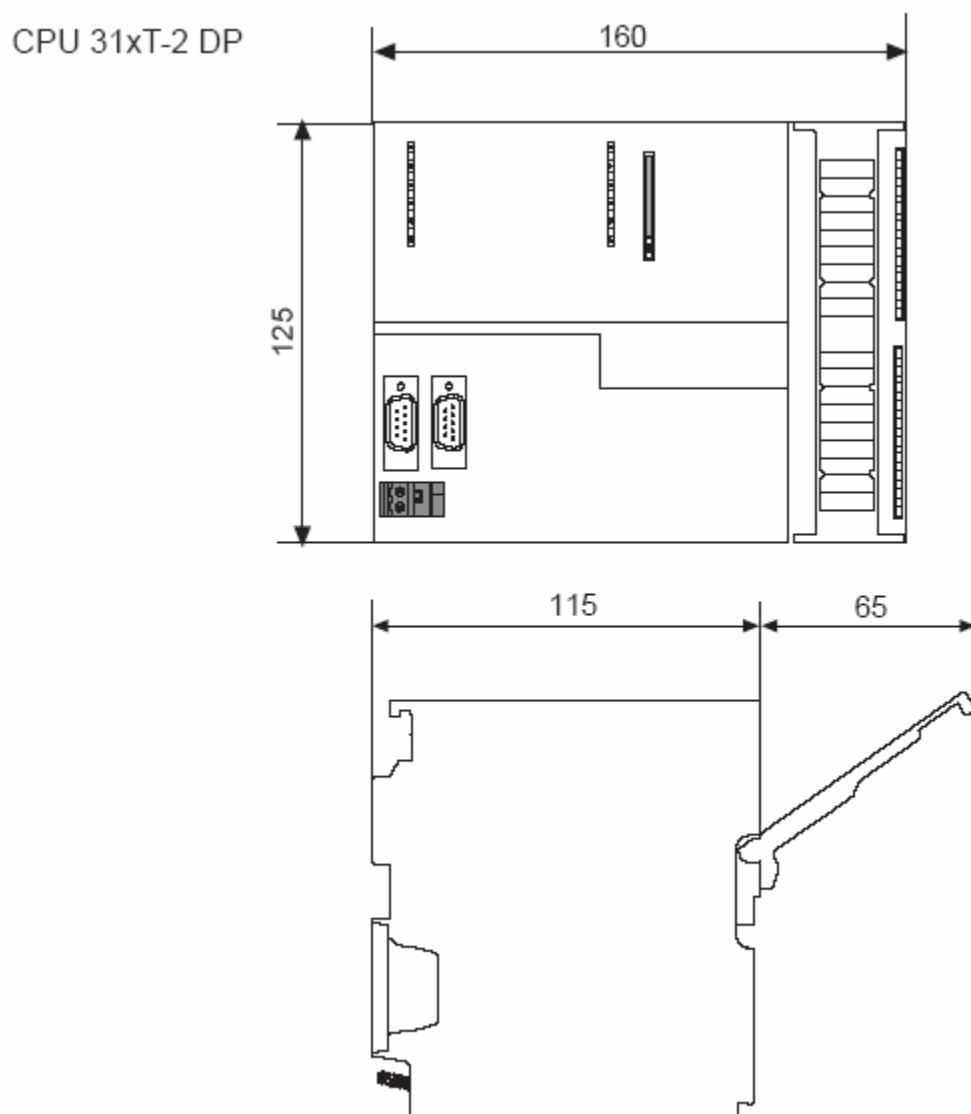
- IV. 位于STEP 7 编程库中的**T-CPU** 运动控制功能块(FB 块)，符合PLCopen 规范（任务组运动控制，Task Force Motion Control）。因此，**T-CPU** 符合国际标准，工程、组态和系统维护，都是极为容易。
- V. **T-CPU** 连结驱动器的方式，是通过接口PROFIBUS DP (Drive) 完成。该接口优化了PROFIBUS DP 的报文结构，通过了RPOFIDRIVE 行规的V3 认证，用于直接连接驱动系统，组成分布式的运动控制系统，控制系统的接线非常简单。
- VI. **T-CPU** 适用连接驱动器的种类非常宽泛。既可以连接西门子的MC伺服驱动器（控制同步电机），也可以连接西门子的MC步进驱动器（控制步进电机）；既可以连接非西门子第三方的伺服驱动器（控制同步电机），也可以连接非西门子第三方的步进驱动器（控制步进电机）；既可以连接西门子的SD变频器（控制异步电机），也可以连接非西门子第三方的变频器（控制异步电机）；既可以连接西门子的LD驱动器，还可以连接液压伺服执行元件。

T-CPU是既可以完成复杂的多轴间精确位置同步控制，还可以完成精确的多轴速度控制等等，是**SIMATIC**家族中一款非常聪明、卓越的运动控制器。

2. SIMATIC S7-300 T-CPU 技术工艺数据

2.1. 常规技术规格

2.1.1. SIMATIC S7-300 T-CPU 外形尺寸



2.1.2. 存储工艺程序 MMC 卡

Type	Order no.	Remark
MMC 4M	6ES7 953-8LM11-0AA0	-
MMC 8M	6ES7 953-8LP11-0AA0	当系统升级时，需要

2.1.3. CPU 时钟特点，功能

Properties	CPU 31xT-2 DP
类型	硬件时钟
出厂设定	DT#1994-01-01-00:00:00
保持时钟的方式	内部电容
系统断电，时钟保持时期	通常6个星期（环境温度40 °C）
系统上电以后，时钟的反应	当系统上电以后，系统时钟将保持连续工作状态直至系统断电
系统时钟在系统断电以后的反应	在系统再次上电以后，系统时钟将会恢复系统断电时刻的 TOD(time of day)状态，继续工作

2.2. SIMATIC S7-300 T-CPU 工艺技术数据

CPU and product version		
Order no.	6ES7 315-6TG10-0AB0	6ES7 317-6TJ10-0AB0
• Hardware version	01	02
• Firmware version (CPU)	V 2.3	V 2.3
• Firmware version (integrated technology)	V 3.1	V 3.1.1
• Corresponding programming package	STEP 7 V 5.3 + SP 1 or higher, plus the optional software package S7-Technology V3.0	STEP 7 V 5.3 + SP 1 or higher and the optional software package S7-Technology V3.0
Technology objects		
Total	32 (axes, cam disks, cams, measuring sensors, external encoders)	64 (axes, cam disks, cams, measuring sensors, external encoders)
Axes	8 axes (virtual or real)	32 axes (virtual or real)
Cams	16 cams (8 cams can be output as "high-speed" cams to the integrated outputs of the Technology CPU. Another 8 cams can be implemented using distributed I/O,	32 cams (8 cams can be output as "high-speed" cams to the integrated outputs of the Technology CPU. Another 24 cams can be implemented using distributed I/O,

	such as ET 200M or ET 200S. TM15 and TM17 High Feature support high-speed cams.)	such as ET 200M or ET 200S. TM15 and TM17 High Feature support high-speed cams.)
Cam disks	16 cam disks	32 cam disks
Measuring sensor	8 measuring sensors	16 measuring sensors
External encoder	8 external encoders	16 external encoders
Memory		
Work memory		
• Integrated	128 KB	512 KB
• Expandable	No	No
Size of retentive memory for retentive DBs	Max. 128 KB	Max. 256 KB
Load memory	Plug-in MMC (max. 8 MB)	Plug-in MMC (max. 8 MB)
Backup medium	Safe backup by means of MMC (maintenance-free)	Safe backup by means of MMC (maintenance-free)
Data consistency on the MMC (after the last programming operation)	At least 10 years	At least 10 years
Technical data		
Processing times		
Processing times for		
• Bit instructions	normally 0.1 μ s	normally 0.05 μ s
• Word instructions	normally 0.2 μ s	normally 0.2 μ s
• Fixed-point mathematics	normally 2.0 μ s	normally 0.2 μ s
• Floating-point mathematics	normally 3.0 μ s	normally 1.0 μ s
Timers/counters and their retentive characteristics		
S7 counters	256	512
• Retentivity	Configurable	Configurable
• Default	From C 0 to C 7	From C 0 to C 7
• Counting range	0 to 999	0 to 999
IEC Counters	Yes	Yes
• Type	SFB	SFB
• Number	Unlimited (limited only by the size of work memory)	Unlimited (limited only by the size of work memory)
S7 timers	256	512
• Retentivity	Configurable	Configurable
• Default	Non-retentive	Non-retentive

• Timer range	10 ms to 9990 s	10 ms to 9990 s
IEC Timers	Yes	Yes
• Type	SFB	SFB
• Number	Unlimited (limited only by the size of work memory)	Unlimited (limited only by the size of work memory)
Data areas and their retentive characteristics		
Flags	2048 bytes	4096 bytes
• Retentivity	Configurable	Configurable
• Retentivity is default setting	MB 0 to MB 15	MB 0 to MB 15
Clock flags	8 (1 flag byte)	8 (1 flag byte)
Data blocks		
• Number	1023 (from DB 1 to DB 1023)	2047 (from DB 1 to DB 2047)
• Size	16 KB	64 KB
• Non-retain support (configurable retentivity)	Yes	Yes
Local data per priority class	Max. 1024 bytes	Max. 1024 bytes
Technical data		
Blocks		
Total	1024 (DBs, FCs, FBs) The maximum number of loadable blocks may be reduced by the size of the MMC you are using.	2048 (DBs, FCs, FBs) The maximum number of loadable blocks may be reduced by the size of the MMC you are using.
OBs	See the Instruction List	See the Instruction List
• Size	16 KB	64 KB
Nesting depth		
• per priority class	8	16
• additionally within an error OB	4	4
FBs	See the Instruction List	See the Instruction List
• Number	2048 (from FB 0 to FB 2047)	2048 (from FB 0 to FB 2047)
• Size	16 KB	64 KB
FCs	See the Instruction List	See the Instruction List
• Number	2048 (from FC 0 to FC 2047)	2048 (from FC 0 to FC 2047)
• Size	16 KB	64 KB
Address areas (I/Os)		

Total I/O address area	Max. 2048 bytes / 2048 bytes (can be freely addressed)	Max. 8192 bytes / 8192 bytes (can be freely addressed)
Of those are distributed I/O	Max. 2048 bytes	Max. 8192 bytes
I/O process image	128 byte / 128 bytes	256 byte / 256 bytes
Digital channels	16348/16348	65536/65536
Of those central	Max. 256	Max. 256
Analog channels	1024/1024	4096/4096
Of those central	64 / 64	64 / 64
Address areas (I/O) of the integrated technology		
Total I/O address area	Max. 1024 bytes / 1024 bytes (can be freely addressed)	Max. 1024 bytes / 1024 bytes (can be freely addressed)
I/O image DP(DRIVE)	64/64	64/64
Configuration		
Racks	1	1
Modules per rack	8	8
Number of DP masters		
• integrated	1	1
• by means of CP	2	2
Supported function modules and communication processors		
• FM	Max. 8	Max. 8
• CP (PtP)	Max. 8	Max. 8
• CP (LAN)	Max. 10	Max. 10
Connection system		
• Requisite front connector	1 x 40-pin	1 x 40-pin
Technical data		
Time-of-day		
Real-time clock	Yes (HW clock)	Yes (HW clock)
• Backup	Yes	Yes
• Backup period	Normally 6 weeks (at an ambient temperature of 40°C)	Normally 6 weeks (at an ambient temperature of 40°C)
• Accuracy	Deviation per day: < 10 s	Deviation per day: < 10 s
Operating hours counter	1	4
• Number	0	0 to 3
• Value range	2 ³¹ hours (when using SFC 101)	2 ³¹ hours (when using SFC 101)
• Resolution	1 hour	1 hour
• Retentive	Yes; has to be restarted at every system restart.	Yes; has to be restarted at every system restart.

Clock synchronization	Yes	Yes
• in the AS	Master / slave	Master / slave
• on MPI	Master / slave	Master / slave
S7 message functions		
Number of stations which can be logged on for message functions	16 (depends on the configured connections for PG / OP and S7 basic communication)	32 (depends on the configured connections for PG / OP and S7 basic communication)
Process diagnostic messages	Yes	Yes
• Simultaneously active interrupt S blocks	40	60
Test and commissioning functions		
Monitor/Modify Tags	Yes	Yes
• Tag	Inputs, outputs, flags, DBs, timers, counters	Inputs, outputs, flags, DBs, timers, counters
• Number of tags	30	30
Of those as monitor tag	Max. 30	Max. 30
Of those as modify tag	Max. 14	Max. 14
Forcing		
• Tag	Inputs / outputs	Inputs / outputs
• Number of tags	Max. 10	Max. 10
Monitor block	Yes	Yes
Single-step	Yes	Yes
Breakpoint	2	2
Diagnostic buffer	Yes	Yes
• Number of entries (not configurable)	Max. 100	Max. 100
Technical data		
Communication functions		
PG/OP communication	Yes	Yes
Global data communication	Yes	Yes
• Number of GD circuits	8	8
• Number of GD packets	Max. 8	Max. 8
Transmitters	Max. 8	Max. 8
Receivers	Max. 8	Max. 8
• Size of GD packets	Max. 22 bytes	Max. 22 bytes
Of those are consistent	22 bytes	22 bytes
S7 basic communication	Yes	Yes
• User data per job	Max. 76 bytes	Max. 76 bytes
Of those are consistent	76 bytes (with X_SEND or X_RCV)	76 bytes (with X_SEND or X_RCV)

	76 bytes (with X_PUT or X_GET as server)	76 bytes (with X_PUT or X_GET as server)
S7 communication	Yes	Yes
• as server	Yes	Yes
• as client	Yes (by means of CP and loadable FBs)	Yes (by means of CP and loadable FBs)
• User data per job	Max. 180 bytes (with PUT/GET)	Max. 180 bytes (with PUT/GET)
Of those are consistent	64 bytes (as server)	160 bytes (as server)
S5-compatible communication	Yes (by means of CP and loadable FCs)	Yes (by means of CP and loadable FCs)
Number of connections	16	32
available for		
• PG communication		
Reserved (default)	1	1
Configurable	1 to 15	1 to 31
• OP communication		
Reserved (default)	1	1
Configurable	1 to 15	1 to 31
• S7 basic communication	Yes	Yes
Reserved (default)	0	0
Configurable	0 to 12	0 to 30
Routing	Yes (max. 4)	Yes (max. 4)
Interfaces		
1. Interface (X1)		
Type of interface	Integrated RS485 interface	Integrated RS485 interface
Physics	RS485	RS485
Electrical isolation	Yes	Yes
Interface power supply (15 to 30 V DC)	Max. 200 mA	Max. 200 mA
Technical data		
Functionality		
• MPI	Yes	Yes
• PROFIBUS DP	Yes	Yes
• PROFIBUS DP(DRIVE)	No	No
• Point-to-point communication	No	No
MPI		
Services		
• PG/OP communication	Yes	Yes
• Routing	Yes	Yes
• Global data communication	Yes	Yes
• S7 basic communication	Yes	Yes

• S7 communication	Yes	Yes
as server	Yes	Yes
as client	Yes (by means of CP and loadable FBs)	Yes (by means of CP and loadable FBs)
• Transmission rates	Max. 12 Mbps	Max. 12 Mbps
DP masters		
Services		
• PG/OP communication	Yes	Yes
• Routing	Yes	Yes
• Global data communication	No	No
• S7 basic communication	No	No
• S7 communication	No	No
• Constant bus cycle time	Yes	Yes
• SYNC/FREEZE	Yes	Yes
• DPV1	Yes	Yes
Transmission speed	Up to 12 Mbps	Up to 12 Mbps
Number of DP slaves	124	124
Address range per DP slave	Max. 244 bytes	Max. 244 bytes
DP slave		
Services		
• Routing	Yes	Yes
• Global data communication	No	No
• S7 basic communication	No	No
• S7 communication	No	No
• Direct data exchange	Yes	Yes
• Transmission rates	Up to 12 Mbps	Up to 12 Mbps
• Automatic baud rate detection	No	No
• Transfer memory	244 bytes I / 244 bytes Q	244 bytes I / 244 bytes Q
• Address areas	Max. 32, each with max. 32 bytes	Max. 32, each with max. 32 bytes
• DPV1	No	No
Technical data		
2. Interface (X3)		
Type of interface	Integrated RS485 interface	Integrated RS485 interface
Physics	RS485	RS485
Electrical isolation	Yes	Yes
Type of interface	Integrated RS485 interface	Integrated RS485 interface
Interface power supply (15 to 30 V DC)	Max. 200 mA	Max. 200 mA
Functionality		
MPI	No	No

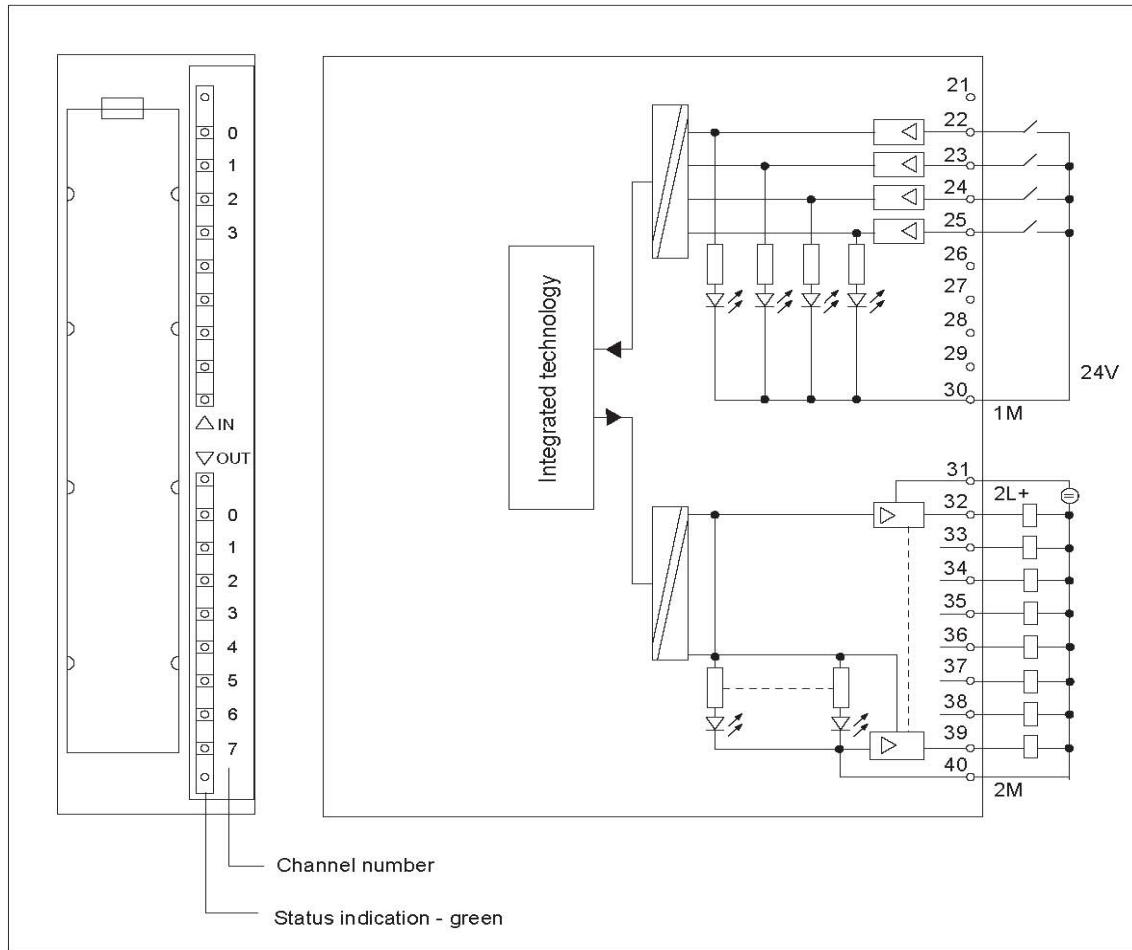
PROFIBUS DP	No	No
PROFIBUS DP(DRIVE)	Yes	Yes
Point-to-point communication	No	No
DP(DRIVE) master		
Services		
• PG/OP communication	No	No
• Routing	No	No
• Global data communication	No	No
• S7 basic communication	No	No
• S7 communication	No	No
• Constant bus cycle time	Yes	Yes
• SYNC/FREEZE	No	No
• DPV1	No	No
Transmission speed	Up to 12 Mbps	Up to 12 Mbps
Number of DP slaves	32	32
Address range per station	Max. 244 bytes	Max. 244 bytes
DP slave	No	No
Programming		
Programming language	LAD/FBD/STL	LAD/FBD/STL
Instructions database	See the Instruction List	See the Instruction List
Nesting levels	8	8
System functions (SFCs)	See the Instruction List	See the Instruction List
System function blocks (SFBs)	See the Instruction List	See the Instruction List
User program security	Yes	Yes
Dimensions		
Mounting dimensions W × H × D (mm)	160 × 125 × 130	160 × 125 × 130
Weight	750 g	750 g
Technical data		
Voltages, currents		
Power supply (rated value)	24 V DC	24 V DC
• Permissible range	20.4 V to 28.8 V	20.4 V to 28.8 V
Current consumption (no-load)	normally 200 mA	normally 200 mA
Inrush current	normally 2.5A	normally 2.5A
I [∫] t	1 A ² s	1 A ² s
External fusing of supply lines (recommendation)	min. 2 A	min. 2 A
Power losses	normally 6 W	normally 6 W

2.3. SIMATIC S7-300 T-CPU 集成运动控制功能的 I/O

2.3.1. 配置集成运动控制功能的 I/O

介绍

CPU 31xT-2 DP 集成了4个数字量输入点、8个数字量输出点。用户可以使用这些集成的I/O点处理运动控制工艺，例如，通过接近开关(BERO)寻找设备的原点，或者利用数字量输出点作为快速凸轮开关的输出信号。



2.3.2. 集成数字量输入点的技术工艺数据

介绍:

集成数字量输入点，被设计为处理运动控制功能，例如，通过接近开关(BERO)寻找设备的原点。当然，也可以利用STEP 7中的功能块 FB "MC_ReadPeriphery"，得到输入点的状态，应用于普通的PLC逻辑控制应用程序中。

Technical data of the integrated technology inputs Technical data	
Module-specific data	Digital inputs
Number of inputs	4

• of those available for technological functions	4
Cable length	
• unshielded	600 m
• shielded	1000 m
Voltage, currents, potentials	
Rated load voltage L+	24 V DC
• Polarity reversal protection	No
Number of simultaneously controllable inputs	
• horizontal assembly	
up to 40 °C	4
up to 60 °C	4
• vertical assembly	
up to 40 °C	4
Electrical isolation	
• between channels and backplane bus	Yes
Permissible potential difference	
• between different circuits	75 V DC / 60 V AC
Insulation test voltage	500 V DC
Current consumption	
• from load voltage L+ (no-load)	0 mA
Status, interrupts, diagnostics	
Status display	1 green LED per channel
Interrupts	No
Diagnostic functions	No
Technical data	
Encoder selection data	
Input voltage	
• Rated value	24 V DC
• logical "1" signal	15 V to 30 V
• logical "0" signal	-3 V to 5 V
Input current	
• with logical "1" signal	normally 7 mA
Input delay	
• "0" to "1" transition	normally 10 µs
• "1" to "0" transition	normally 10 µs
Input characteristic	to IEC 1131, Type 1
Connection of 2-wire BEROs	No

2.3.3. 集成数字量输出点的技术工艺数据

介绍:

集成数字量输入点，被设计为处理运动控制功能，例如，利用数字量输出点作为快速凸轮开关的输出信号。当然，也可以利用STEP 7中的功能块FB "MC_WritePeriphery"，得到输出点的状态，应用于普通的PLC逻辑控制应用程序中。

Technical data of the integrated technology outputs Technical data	
Module-specific data	Digital outputs
Number of outputs	8
Cable length	
• unshielded	Max. 600 m
• shielded	Max. 1,000 m
Voltage, currents, potentials	
Rated load voltage L+	24 V DC
• Polarity reversal protection	No
Accumulated current of outputs (per group)	
• horizontal assembly	
up to 40 °C	max. 4.0 A
up to 60 °C	max. 3.0 A
• vertical assembly	
up to 40 °C	max. 3.0 A
Technical data	
Electrical isolation	
• between channels and backplane bus	Yes
Permissible potential difference	
• between different circuits	75 V DC / 60 V AC
Insulation test voltage	500 V DC
Current consumption	
• from load voltage L+ (no-load)	Max. 100 mA
Status, interrupts, diagnostics	
Status display	1 green LED per channel
Interrupts	No
Diagnostic functions	No
Data for the selection of an actuator for standard DO	
Output voltage	
• with logical "0" signal	Max. 3 V
• with logical "1" signal	min. (2 L+) - 2.5 V
Output current	

• with logical "1" signal	
Rated value	0.5 A
Permissible range	5 mA to 0.6 A
• with logical "0" signal (quiescent current)	Max. 0.3 mA
Load impedance range	48 Ω to 4 k Ω
Lamp load	Max. 5 W
Parallel wiring of 2 outputs	
• for redundant load control	Not possible
• for performance increase	Not possible
Control of a digital input	Not possible
Signal frequency	
• with resistive load	Max. 100 Hz
• with inductive load to IEC 947-5, DC13	Max. 0.2 Hz
• with lamp load	Max. 100 Hz
Inductive shutdown voltage limited internally to	normally (2 L+) - 48 V
Short-circuit protection of the output	Yes, electronic
• Response threshold	normally 1 A
High-speed cams	
• Switching accuracy	+/- 70 μ s

3. SIMATIC S7-300 T-CPU 订货信息

3.1. CPU 31xT-2 DP 硬件和编辑软件

SIMATIC S7-300 T-CPU / software 订货号信息:

Function	Product	Order number
SIMATIC Technology CPU	CPU 315T-2DP	6ES7315-6TG10-0AB0
SIMATIC Technology CPU	CPU 317T-2DP	6ES7317-6TJ10-0AB0
Micro Memory Card	MMC 4 MB	6ES7953-8LM11-0AA0
Micro Memory Card	MMC 8 MB	6ES7953-8LP11-0AA0
需要的前连接器	1 x 40-pin	6ES7 392-1AM00-0AA0 或者
		6ES7 392-1BM01-0AA0
Optional "S7-Technology" software package	SIMATIC S7 Technology V3.0	6ES7864-1CC30-0YX0
STEP 7	STEP 7 V5.3 + SP3	6ES7810-4CC07-0Yxx

另外，除了可以使用软件选件包“S7-Technology”提供的“表格”、“多项式”的方式编辑凸轮盘，用户还可以选择如下软件提供的“图形化凸轮编辑器”进行编辑凸轮盘：

Function	Product	Order number
SCOUT CamTool	SCOUT CamTool V2.1	6AU1810-0FA21-0XA0

3.2. 在 PROFIBUS DP (Driver) 可以选择的组件订货号信息

Product	Order number
SIMODRIVE	
SIMODRIVE 611 universal	6SN1118-XNH00-0AAx
SIMODRIVE 611 universal HR	6SN1114-0NB0X-0AAx
Optional module Motion Control with PROFIBUS DP (for SIMODRIVE 611U)	6SN1114-0NB01-0AA1
SIMODRIVE POSMO CA	6SN2703-3AAx
SIMODRIVE POSMO CD	6SN2703-2AAx
SIMODRIVE POSMO SI	6SN24x
SIMODRIVE sensor single-turn / synchro-flange	6FX2001-5FP12

SIMODRIVE sensor, single-turn / clamping flange	6FX2001-5QP12
SIMODRIVE sensor multi-turn / synchro-flange	6FX2001-5FP24
SIMODRIVE sensor multi-turn / clamping flange	6FX2001-5QP24
MICROMASTER 4	
COMBIMASTER 411	6SE6401-0PB00-0AA0
MICROMASTER 420	6SE6400-1PB00-0AA0
MICROMASTER 430	6SE6400-1PB00-0AA0
MICROMASTER 440	6SE6400-1PB00-0AA0
MASTERDRIVES with communication module CBP2	
Motion Control	6SE7090-0XX84-0FF5
Motion Control Plus	6SE7090-0XX84-0FF5
Vector Control CUVC	6SE7090-0XX84-0FF5
Vector Control Plus	6SE7090-0XX84-0FF5
Note the order number suffix "Gxx" for communication module CBP2 when placing your order.	
SINAMICS	
SINAMICS S120 (firmware up to V2.3x)	6SL3040-0MA00-0AAx
Terminal Module TM15 *	6SL3055-0AA00-3FA0
Terminal Module TM17 High Feature *	6SL3055-0AA00-3HA0
Interface Module	
ADI 4 Module	6FC5211-0BA01-0AA2
IM 174 Module	6ES7174-0AA00-0AA0
Connection between IM 174 and SIMODRIVE 611-A ±10 V	6FX2002-3AD01-xxxx (Last 4 number based on actual cable Length)
Connection between IM 174 and four stepper drives	6FX2002-3AE00-xxxx (Last 4 number based on actual cable Length)
Connection between Incremental position encoder with RS422 and IM 174 (EXE with linear scale)	6FX8002-2CD01-xxxx (Last 4 number based on actual cable Length)
Connection between ROD 320 encoder with 1FT5 motor and IM 174	6FX8002-2CE02-xxxx (Last 4 number based on actual cable Length)
Connection between absolute encoder (SSI) and IM 174	6FX8002-2CC11-xxxx (Last 4 number based on actual cable Length)
Connection between SIMODRIVE 611-A controller plug-in 1FK6 motors with resolver encoder and IM 174	6FX8002-2CJ00-xxxx (Last 4 number based on actual cable Length)
SIMATIC ET 200M **	
IM 153-2 High Feature	6ES7153-2BA00-0XB0
SM 331 AI8x14Bit	6ES7331-7HF00-0AB0
SM 331 AI8x14Bit	6ES7331-7HF01-0AB0
SM 332 AO4x16Bit	6ES7332-7ND01-0AB0
SM 332 AO4x16Bit	6ES7332-7ND02-0AB0
SM 321 DI16xDC24V	6ES7321-1BH10-0AA0
SM 321 DI16xDC24V, Alarm	6ES7321-7BH01-0AB0
SM 322 DO16xDC24V/0,5A	6ES7322-1BH10-0AA0

SIMATIC ET 200S **	
IM 151-1 High Feature	6ES7151-1BA00-0AB0
2AI I 2WIRE HS	6ES7134-4GB51-0AB0
2AI I 4WIRE HS	6ES7134-4GB61-0AB0
2AI U HS	6ES7134-4FB51-0AB0
2AO I HF	6ES7135-4MB01-0AB0
2AO U HF	6ES7135-4LB01-0AB0
2DI DC24V HF	6ES7131-4BB00-0AB0
4DI UC24..48V	6ES7131-4CD00-0AB0
4DI DC24 HF	6ES7131-4BD00-0AB0
2DO DC24V/0,5A HF	6ES7132-4BB00-0AB0
2DO DC24V/2A HF	6ES7132-4BB30-0AB0
4DO DC24V/0,5A ST	6ES7132-4BD00-0AA0

4. SIMATIC S7-300 T-CPU 典型自动化控制系统配置

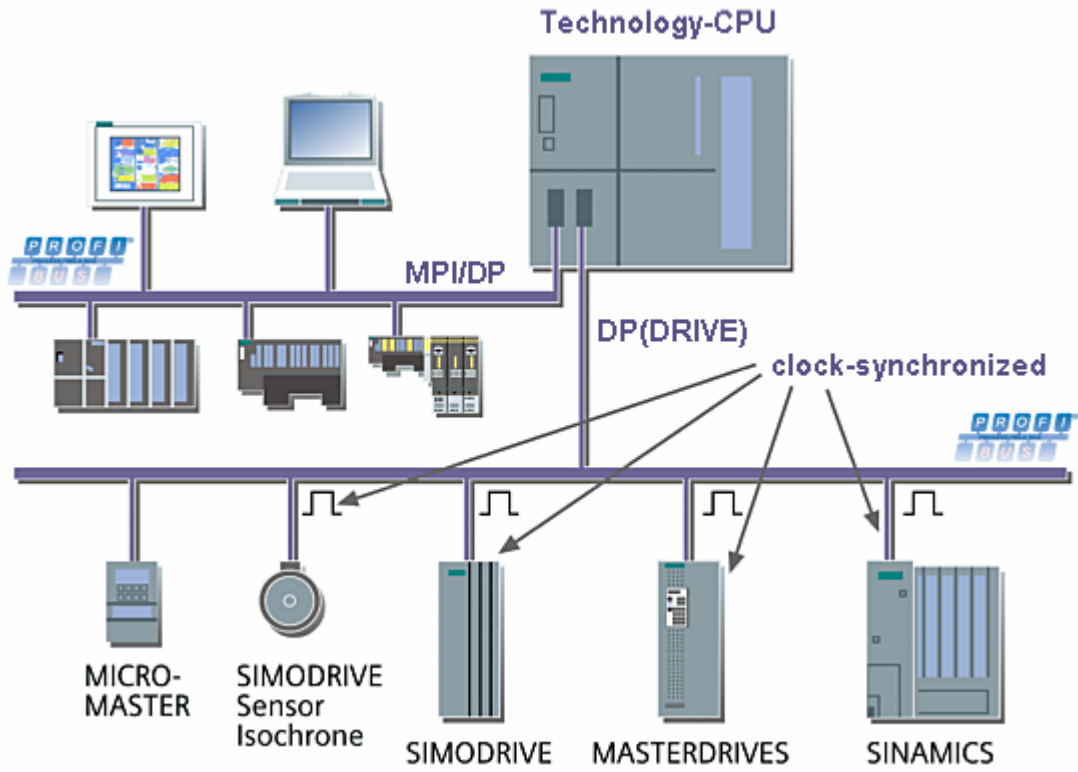


图 1

4.1 SIMATIC S7-300 T-CPU 连接西门子伺服驱动器的 SIMODRIVE 611U

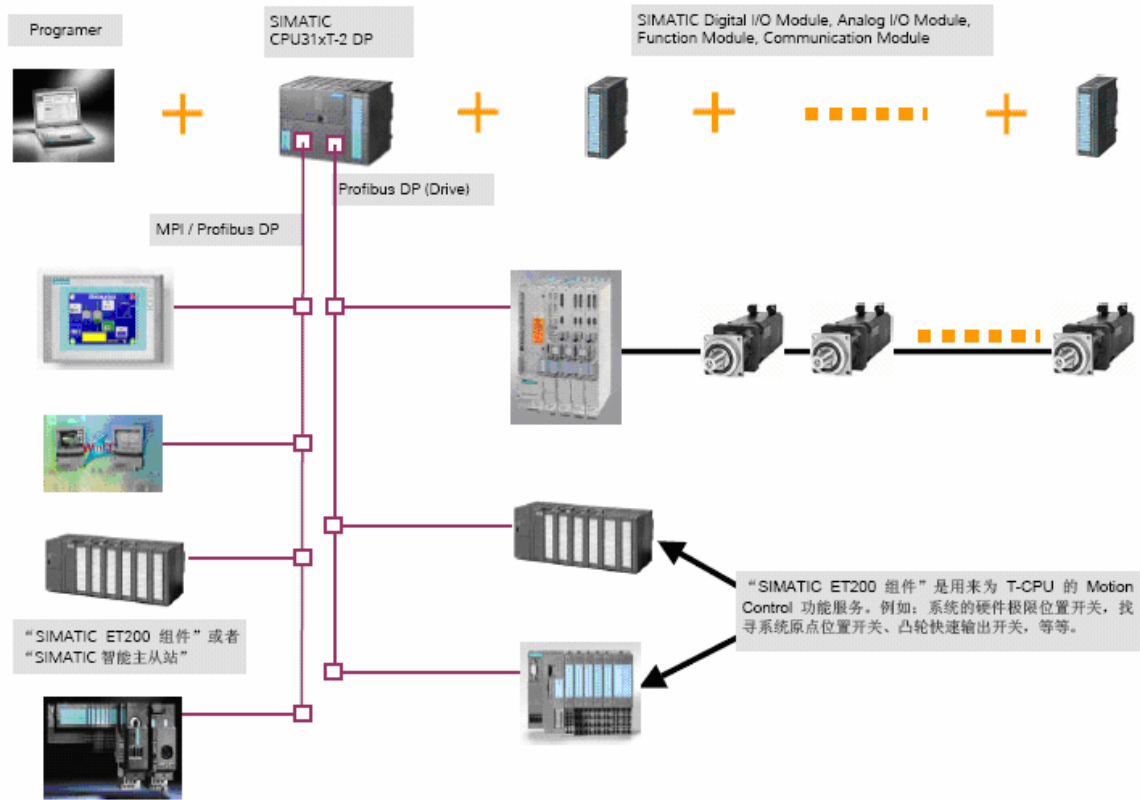


图 2

4.2 SIMATIC S7-300 T-CPU 连接西门子伺服驱动器的 SINAMICS S120 DC/AC 单元

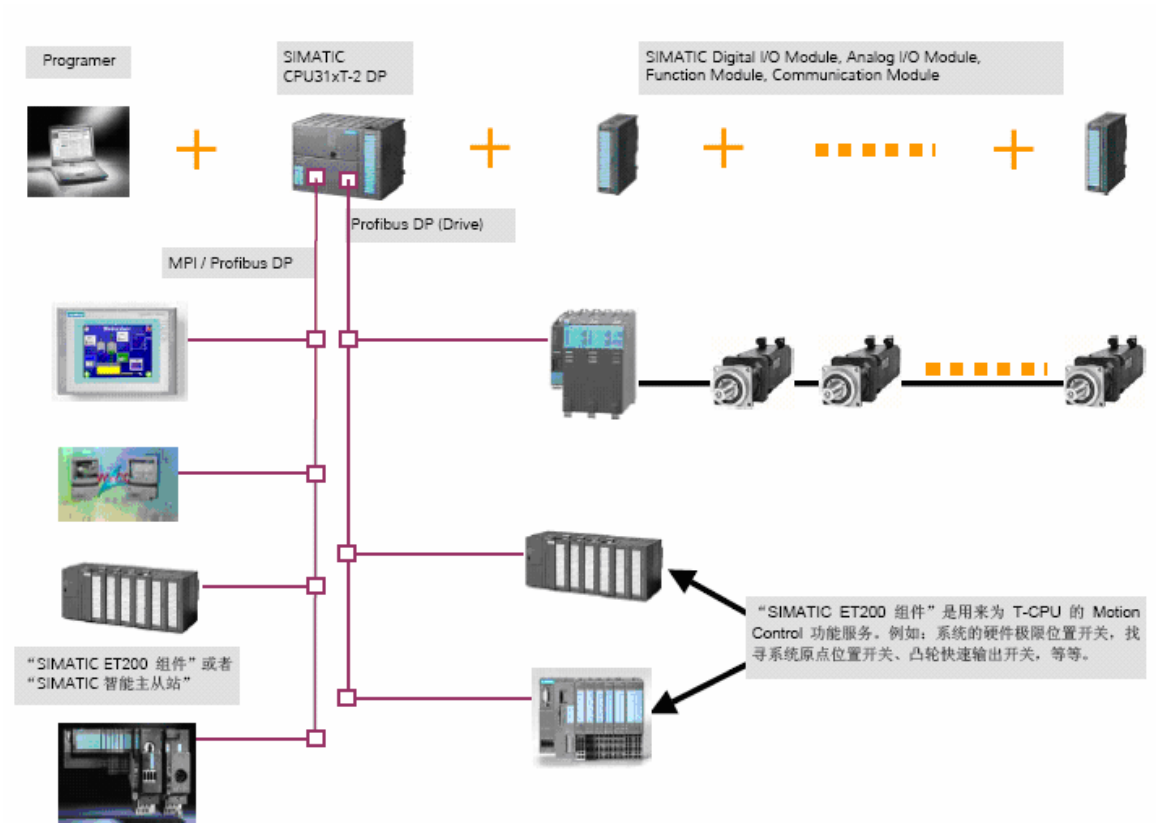


图 3

4.3 SIMATIC S7-300 T-CPU 连接西门子伺服驱动器的 SINAMICS S120 AC/AC 单元

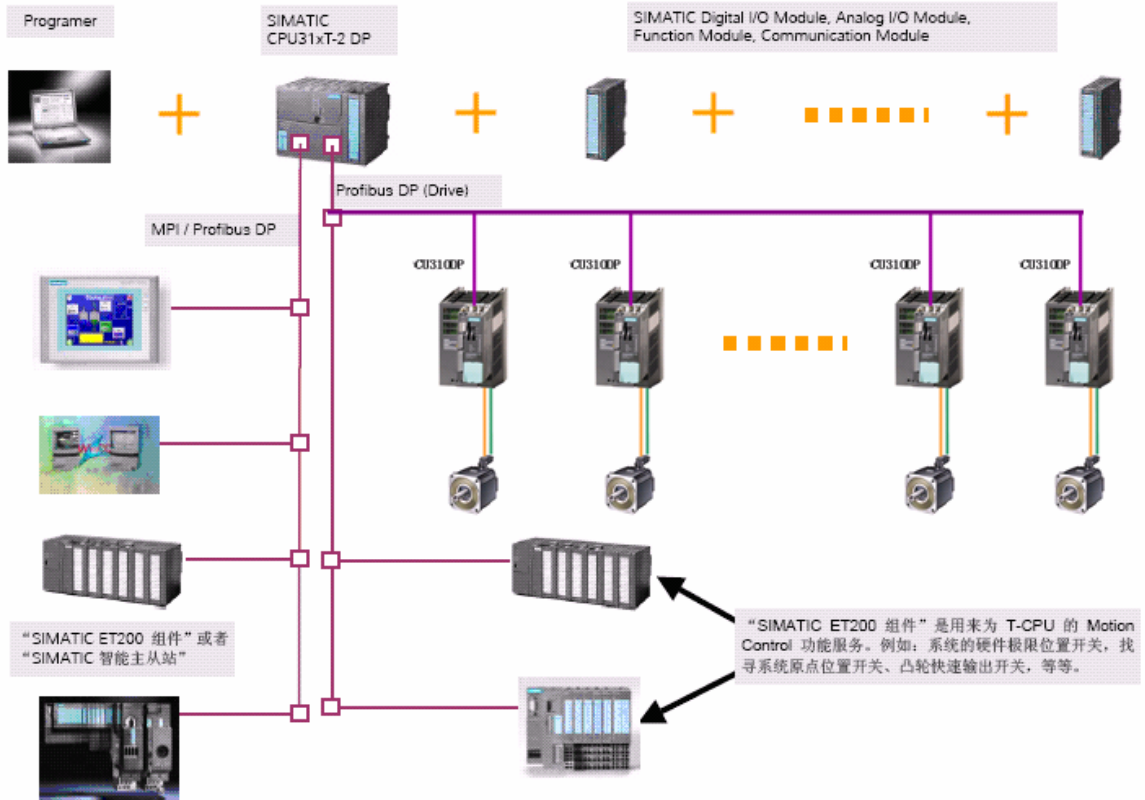


图 4

4.4 SIMATIC S7-300 T-CPU 连接西门子变频驱动器 MICROMASTER 420/430/440 和 COMBIMASTER 411，速度控制

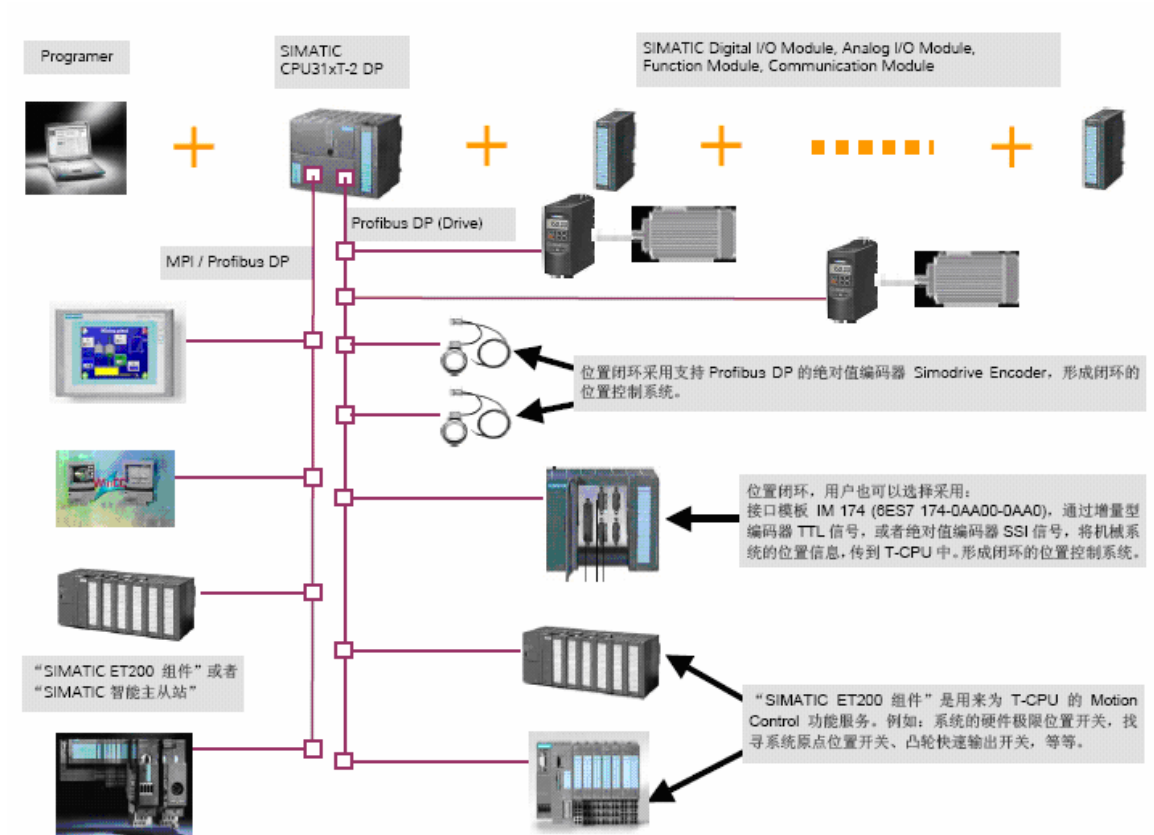


图 5

4.5 SIMATIC S7-300 T-CPU 连接西门子变频驱动器 MICROMASTER 420/430/440 和 COMBIMASTER 411，位置控制

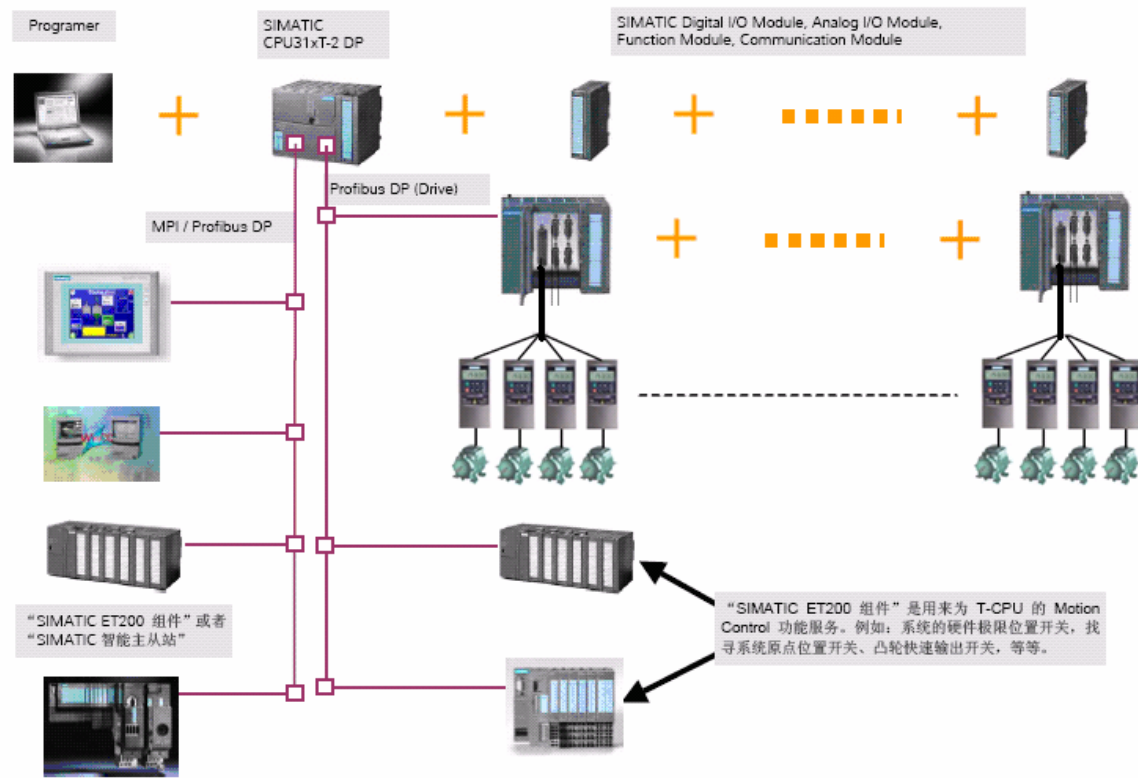


图 6

4.6 SIMATIC S7-300 T-CPU 连接西门子驱动器的 SIMOVERT ASTERDRIVES VC 和 SIMOVERT MASTERDRIVES MC

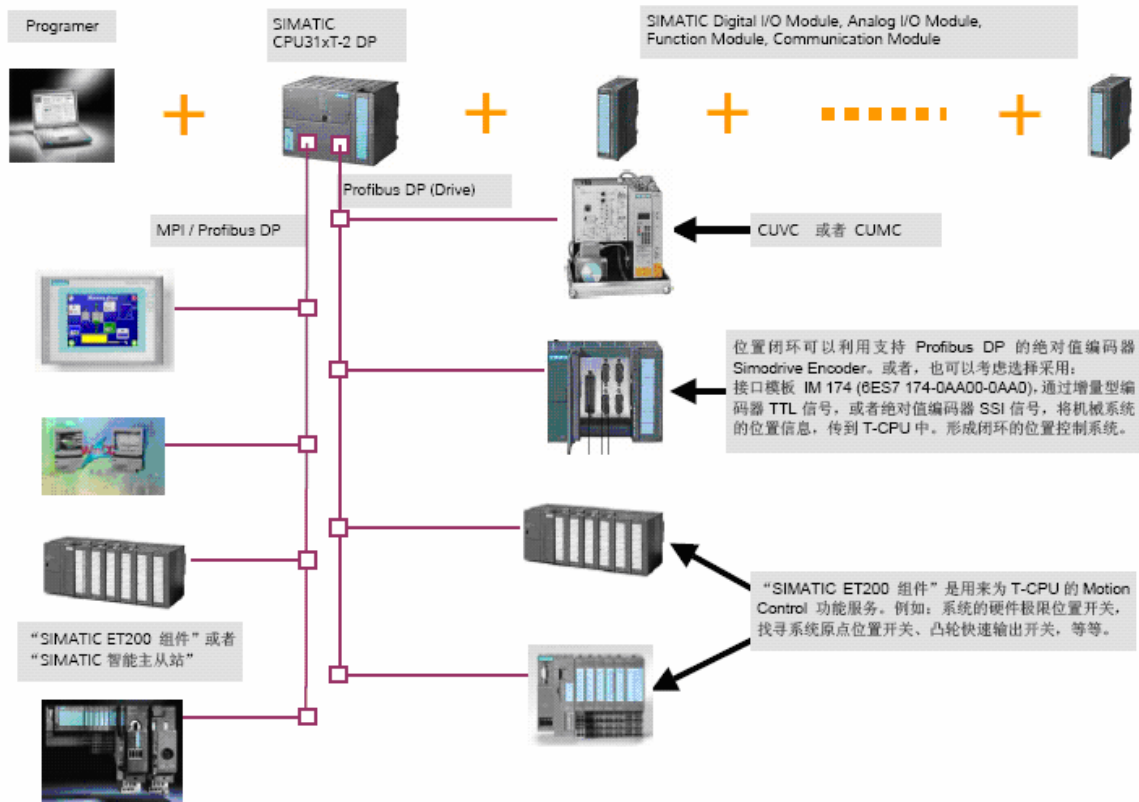


图 7

4.7 SIMATIC S7-300 T-CPU 连接步进电机驱动器

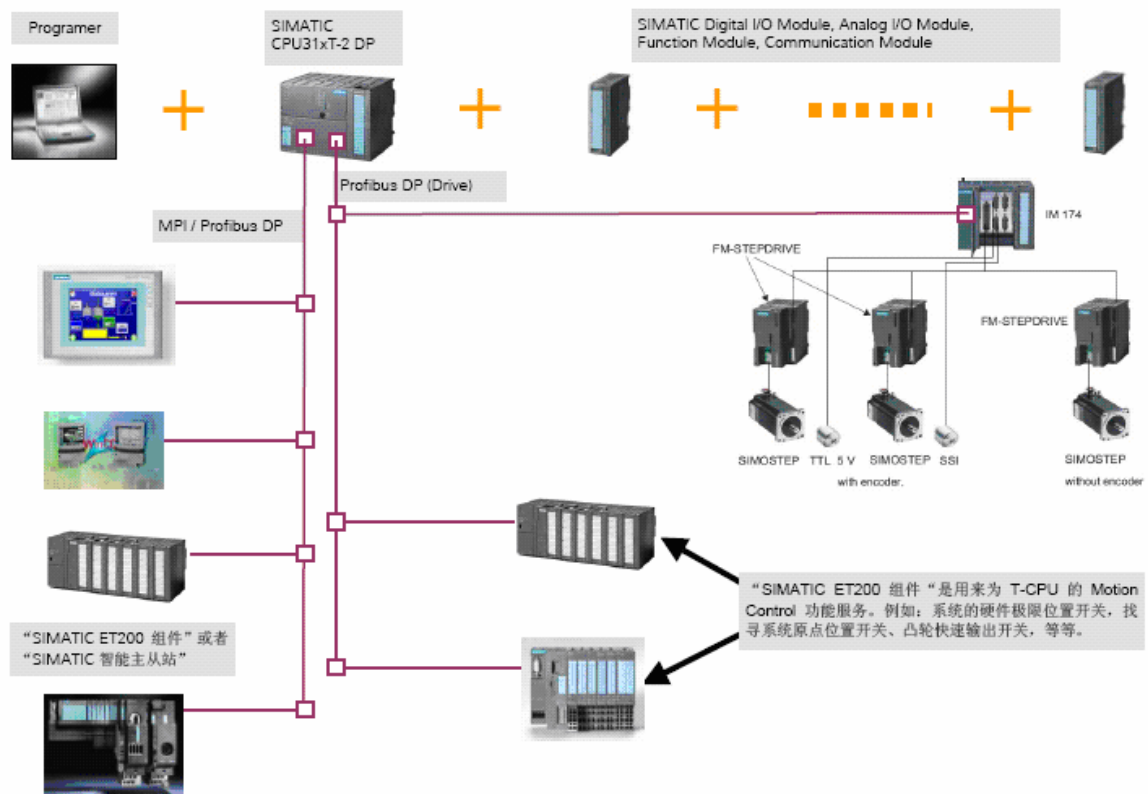


图 8

4.8 SIMATIC S7-300 T-CPU 连接液压伺服执行机构

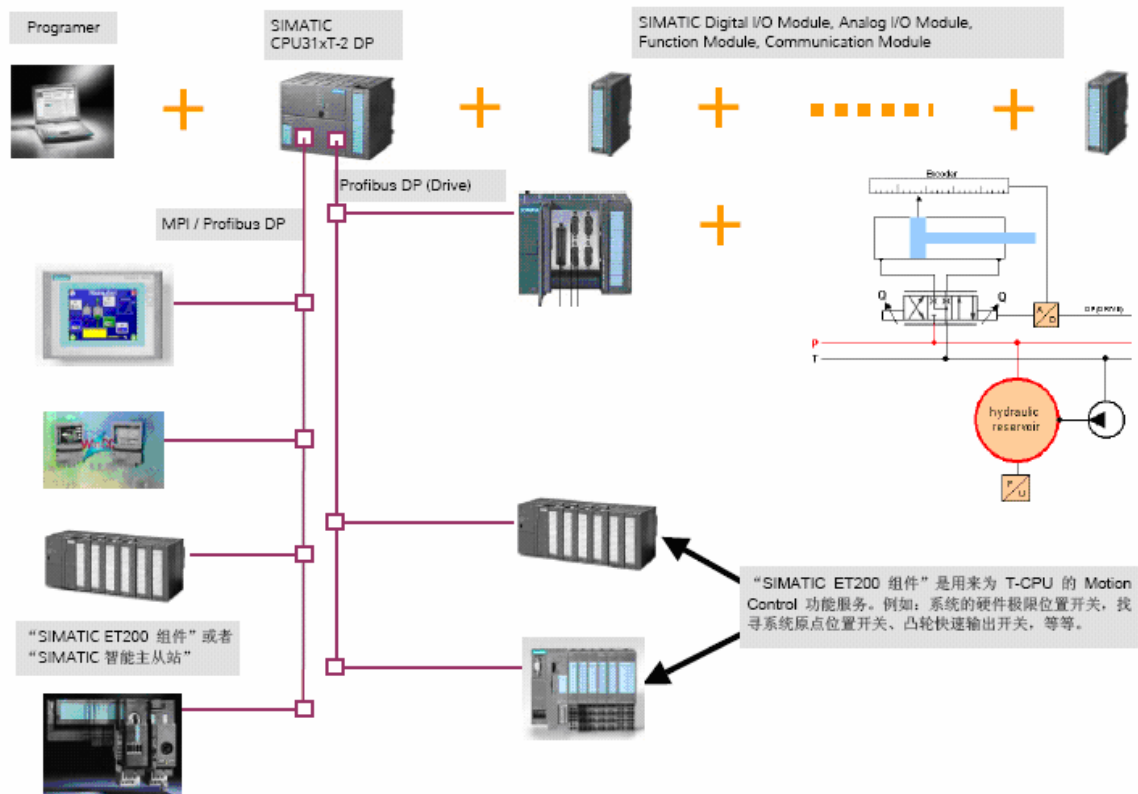


图 9

4.9 SIMATIC S7-300 T-CPU 连接非西门子第三方的驱动器

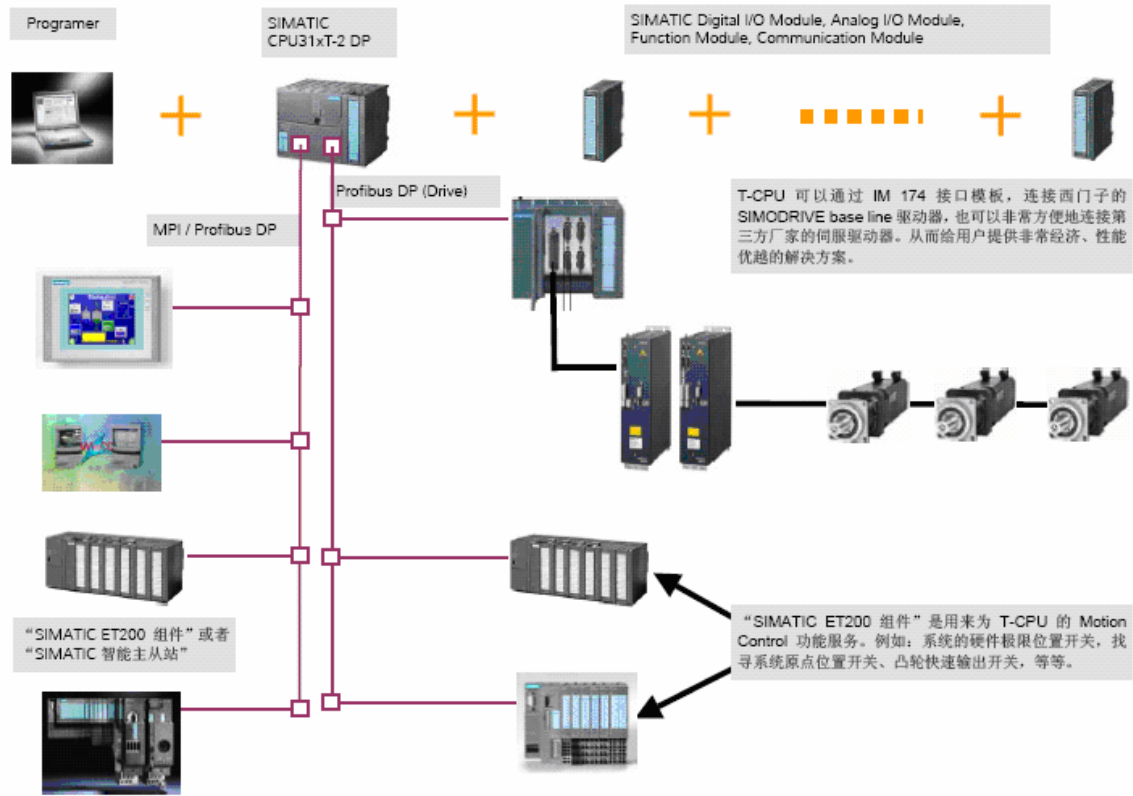


图 10