

## Catalog ST PCS 7 (system components) SIMATIC PCS 7 for V9.1

下面以 500 个 PO 的单站项目为例，介绍一下选型。

### 一. 工程师站选型

有两种方案来选择，一种是独立的 ES 和 OS，一种是 ES 又兼做 OS 单站运行。

#### 1. ES 的订货号，一个项目至少订一个(或者买一个 ES/OS single station)，参考下图

定货号：6ES7658-5AX68-0CA5

**SIMATIC PCS 7**  
**AS/OS Engineering Software**  
**ASIA V9.1**  
2 languages (English, Chinese),  
software class A, floating license for  
1 user  
With SIMATIC PCS 7 Software  
Media Package ASIA

- Goods delivery  
ASIA license key on USB hardlock  
and Certificate of License,  
bundled with 1 × SIMATIC PCS 7  
Software Media Package ASIA per  
order item

**6ES7658-5AX68-0CA5**

除了 AS/OS 授权外，PCS 7 项目还需要 AS RT PO 授权，参考下面的链接：

<http://support.automation.siemens.com/CN/view/zh/38855208>

从 PCS 7 V7.0 开始，如何计算 AS 和 OS 授权的 PO 个数？

如何计算 PCS 7 授权中的过程对象（PO）数量？

<http://support.automation.siemens.com/CN/view/zh/23377654>.

通常的计算方法是：项目里 AO,AI,DO 的点数加在一起，做为 AS,OS 的 PO 的数量。

注：这个授权可以累加，且不分版本，即使订多了，可以留到下一个项目来用。

162/548

**SIMATIC PCS 7**  
**AS Runtime license**  
Language-neutral, floating license  
for 1 user  
No SIMATIC PCS 7 Software Media  
Package

- Physical delivery  
License key on USB flash drive,  
certificate of license

- 100 POs	<b>6ES7653-2BA00-0XB5</b>
- 1 000 POs	<b>6ES7653-2BB00-0XB5</b>
- 10 000 POs	<b>6ES7653-2BC00-0XB5</b>

定货号：

- 100 Pos: 6ES7653-2BA00-0XB5

如果项目需要 500 个 AS RT PO，那么就需要另外买 4 个 100PO 授权，因为每一对 400H 控制器送 100 个 PO 的 AS RUNTIME 授权。。

2. ES 又当单站来用，选择如下的授权，一个项目也需要一个，参考下面：

定货号：6ES7651-5AA68-6CA0

<b>SIMATIC PCS 7</b> <b>ES single station ASIA V9.1</b> Incl. 250 AS/OS Runtime POs 2 languages (English, Chinese), software class A, single license for 1 installation With SIMATIC PCS 7 Software Media Package ASIA Goods delivery ASIA license key on USB hardlock, Certificate of License, bundled with 1 x SIMATIC PCS 7 Software Media Package ASIA per order item	
• ASIA	<b>6ES7651-5AA68-0CA0</b>
• SN ASIA (including SOFTNET REDCONNECT)	<b>6ES7651-5AA68-6CA0</b>

注：这个 6CA0 的授权，也包括了普通网卡连接 400H 的冗余连接授权。如果使用 CP1623 和 400H 通讯，需要额外购买下面的授权：

SIMATIC NET HARDNET S7-REDCONNECT V16

订货号：6GK1716-0HB16-0AA0

ES/OS 授权只包括了 250 PO 的 AS/OS PO 数量，AS RT POAS 和 OS PO 都需要再扩展，AS PO 参考第 1 小节，如果 OS 运行的授权 PO 数不够，可以参考下面授权来增加 PO 数量，PO 授权不分语言版本。

OS PO 的扩展见下图：

<b>SIMATIC PCS 7</b> <b>OS Runtime License</b> For extending the OS Runtime POs, cumulative Language-neutral, software class A, single license for 1 installation No SIMATIC PCS 7 Software Media Package • Goods delivery License key on USB flash drive and certificate of license	
- 100 POs	<b>6ES7658-2XA00-0XB0</b>
- 1 000 POs	<b>6ES7658-2XB00-0XB0</b>
- 5 000 POs	<b>6ES7658-2XC00-0XB0</b>

OS RT 100PO : 6ES7 658-2XA00-0XB0 ,需要购买 3 个。

## 二、单站授权

除 ES 外的每个单站都需要购买如下授权：

### 1. 单站授权 6ES7 658-2AA68-6CA0

<b>SIMATIC PCS 7 OS Software single station ASIA V9.1 incl. 100 OS Runtime PO</b> 2 languages (English, Chinese), software class A, single license for 1 installation  With SIMATIC PCS 7 Software Media Package ASIA  Goods delivery ASIA license key on USB hardlock and Certificate of License, bundled with 1 × SIMATIC PCS 7 Software Media Package ASIA per order item	
• ASIA	<b>6ES7658-2AA68-0CA0</b>
• SN ASIA (including SOFTNET REDCONNECT)	<b>6ES7658-2AA68-6CA0</b>

### 2. OS RT PO 授权

单站的授权只包括 100 个 PO 的授权，参考前边第 2 小节的 OS RT PO 的授权。

注：AS RT PO 只是在 ES 上下载 CFC 里使用，所以纯单站只需要增加 OS RT PO，不需要 AS RT PO。所以需要购买 4 个 100 PO 的 OS RT PO 授权：

OS RT 100PO : 6ES7 658-2XA00-0XB0 ,需要购买 4 个。

### 3. S7 Hardnet S7-redconnect 授权（可选，是否购买取决于是否使用了 CP1623）

SIMATIC NET HARDNET S7-REDCONNECT V16

订货号：6GK1716-0HB16-0AA0

三. 关于 PCS 7 的单站和 OS 服务器的 I/O 点数等性能，在样本的

1) 不同 CPU 的点数在目前样本的 P186 页

## Application

Automation system with APL	AS 412H	AS 414-3	AS 414-3IE	AS 414H	AS 416-2	AS 416-3	AS 416-3IE	AS 416H	AS 417-4	AS 417H
	----- AS 410 with CPU 410-5H -----									
	----- AS 410E <sup>1)</sup> -----									
Analog value measurements	10	150	150	100	300	500	500	400	800	600
Digital value measurements	20	300	300	250	600	1 000	1 000	800	1 400	1 000
PID controls	5	50	50	50	100	200	200	150	250	200
Motors	7	75	75	75	150	250	250	200	450	400
Valves	7	75	75	75	150	250	250	200	450	400
SFC	0	15	15	15	60	100	100	100	200	200
Steps	0	150	150	150	700	1 000	1 000	1 000	2 000	2 000
Dosing	0	5	5	3	20	25	25	25	50	50
Digital inputs DI	30	450	450	300	900	1 500	1 500	1 200	2 200	1 800
Digital outputs DO	10	150	150	110	300	500	500	400	750	650
Analog inputs AI	15	225	225	150	450	750	750	600	1 100	900
Analog outputs AO	5	75	75	50	150	250	250	200	350	350
Process objects (PO)	30	450	450	350	900	1 500	1 500	1 200	2 200	2 000

Typical mixed configuration limits for SIMATIC PCS 7 automation systems, based on the SIMATIC PCS 7 Advanced Process Library (APL)

<sup>1)</sup> Up to 200 process objects

### Note:

The values quoted here are not AS-specific maximum values for the particular item. Instead, they represent a typical distribution of the available total capacity of the AS during mixed operation of all the items of a contiguous block.

The number of process objects is not an absolute value, but depends on the library used as well as on the number and type of blocks used in the application.

2) 单站或者服务器带多少 I/O 点，参考 P64 页

<b>OS quantity framework</b>	
Max. number of OS single stations	8
Max. number of OS servers/pairs of servers	18
Max. number of automation systems per OS server/pair of servers	64
Max. number of OS clients in multi-client mode <sup>1)</sup> per multiple station system	40
Max. number of monitors per operator station with multi-channel operation	4
Max. number of OS areas	64
Max. number of windows per monitor	1 to 16 (adjustable)
Number of trends per trend window	10
Selection time for OS area display (100 process symbols)	< 2 s
Max. number of configurable messages per server	200 000
Max. number of configurable process objects	Approx. 216 000
Max. number of configurable process tags	Approx. 128 000 <sup>2)</sup>
<b>Integral high-performance archive system</b> (cyclic buffer), based on Microsoft SQL server, for:	
• Process value archiving (per OS server/single station)	Approx. 1 500/s
• Message archiving (per OS server/single station)	Steady-state load approx. 10/s Message peak approx. 3 000 / 4 s

OS性能

1) If every OS client has access to all OS servers/pairs of servers

2) Approx. 300 000 I/O

#### 四. 建议

1. 如果对选型不是太熟悉，在自己选完型后，建议联系西门子当地办事处，请专业的售前人员帮忙审核。
2. 如果项目里涉及到 Batch, Route Control, PH 等应用，也建议联系当地办事处。