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SIMATIC

PCS 7 Process Control System PCS 7 Industry Library Readme V9.1 (Online)

Readme

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Legal information

Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

⚠ DANGER

indicates that death or severe personal injury **will** result if proper precautions are not taken.

⚠ WARNING

indicates that death or severe personal injury **may** result if proper precautions are not taken.

⚠ CAUTION

indicates that minor personal injury can result if proper precautions are not taken.

NOTICE

indicates that property damage can result if proper precautions are not taken.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

Qualified Personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

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We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

Siemens AG
Digital Industries
Postfach 48 48
90026 NÜRNBERG
GERMANY

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Security information

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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 constitute one element of such a concept.

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Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends that product updates are applied as soon as they are available and that the latest product versions are used. Use of product versions that are no longer supported, and failure to apply the 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
https://www.siemens.com/industrialsecurity.

Overview

2

Note

Read these notes carefully; they contain information that will be important to you and upgrades to the Industry Library.

The information given in this Readme file takes precedence over all the PCS 7 manuals.

Notes on documentation

3

The terms or message classes Alarm, Warning, Tolerance or the corresponding acronyms in icons and colors used in the documentation are not valid when using user-configured message classes.

These terms and colors depend on the project-specific setting.

The user-configured alarm classes are only supported by block icons from the template pictures "@PCS7TypicalsAPLV9.PDL" or template "@TemplateAPLV9.PDL" .

In the section "Local operation" of the documentation, subsection „`LocalSetting` = 2 and `LocalSetting` = 4" state that the runtime monitoring of the block is disabled. The following should be stated here: "The runtime monitoring only works with rapid stop, external errors, motor protection and when both feedback signals are set (discrepancy)."

New features and changes as compared to previous versions

4

4.1 Notes on the changes

Note

For possible behavior changes in earlier versions, please refer to the readme of the previous version.

4.2 Version 9.1

4.2.1 What's New in Version 9.1

IL for PCS 7:

Integration of the functionalities of PCS 7 APL V9.1

The following APL functonallites are now supported.

- **Display of the block-internal** error states `ErrorNum` in the standard view.
  Changed standard views: ILck4x3L, ILck8x4L, MonAn08, MonAnDi, PolyCurve, ParaCtrl, VlvDiv, VlvDsL, VoteAnL, VoteDiL, SPCurve, UsrM
- The **information on the interlocks** Permission (`Permit`), Interlock (`Interlock`) , protection (`Protect`), motor protection function, external faults (FaultExt) and control system faults (`CSF`) are now also available as **additional outputs** (`PermitOut`, `IntlockOut`, `ProtectOut`, ..., `TripOut`, `FaultExtOut`, `CSF_Out`), . this concerns the following block types: VlvDsL, VlvDiv, APC_Supervisor, FxCtrl, MonDin, MonMof, PeakMon, PolyCurve, SPCurve, PuPa, TcCtrl, Tank.
- The information "**Internal simulation**" is now also available at the new output `SimAct`. concerned blocks: VlvDsL, VlvDiv, VoteAnL, PeakMon, CalcPwrL, SPCurve
- Provide **limit value inputs as outputs**
  concerned blocks: PeakMon, CalcThx, VoteAnL
- Provide **operating range limits and unit as outputs (**`xxxOpScaleOut, xxxUnitOut` **)**
  concerned blocks: CalcWatP, HxFct, LdMngt8, MonAn08, MonAnDi, OptiOT, PolyCurv, SpCurv , VoteAnL

- **Analog auxiliary values as outputs**
  The analog auxiliary values are also available as output together with their units (`UserAna1Out, UserAna2Out, UA1unitOut, UA2unitOut`)
  concerned blocks: APC_Supervisor, CalcPwrL, CalcTHX, CalcWatP, HxFct, LdMgmt8, MonAn08, MonAnDi, OptiOT, PeakMon, SPCurve, TimeSwitch, VlvDiv, VlvDsL, VoteAnL, VoteDiL, ILck4x3L, ILck8x4L, PolyCurve.
- **Second User status** (`UserStatus2`)
  The mentioned blocks have been prepared for the future support of a second user status. Currently the inputs are still without function.
  concerned blocks: APC_Supervisor, CalcPwrL, CalcTHX, CalcWatP, HxFct, ILck4x3L, ILck8x4L, LdMgmt8, MonAn08, MonAnDi, OptiOT, PeakMon, PolyCurve, SPCurve, TimeSwitch, VlvDiv, VlvDsL, VoteAnL, VoteDiL.
- **Disableing switch points**
  The behavior of the outputs `xx_xx_Act` (limit value/switching point active) can be configured by means of a new Feature-Bit.
  The limit value outputs (switching points) were previously set independently of the inputs to enable the limit value message (`xx_xx_MsgEn`).
  You can set via Feature-Bit that no monitoring for switching points takes place when the limit value message is deactivated (`xx_xx_MsgEn` =0).
  concerned blocks: CalcPwrL, MonAn08, MonAnDi, PeakMon, VoteAnL.
- **Reset option in case of error in local mode**
  With Feature2 Bit13 = 1, an error can be reset for the motor and valve blocks **VlvDiv**, **VlvDsL**., An error can also be reset in local operation (`LocalSetting = 1, 3`) via the reset button in the standard view.
- **Support of local and daylight saving time**
  The **AccuS** block has been extended by external time input and local time.
  The local time is calculated using the FC296 LOC_TIME_BAS function from the PCS 7 Basis Library.
  The **SPCurv** block has been prepared for this.
- **Panel block Compatibility**
  The panel blocks are supports **APL V9.1** as well as **APL V9.1.1** function blocks.
- **Bar display with scaling values**
  The bar displays in the faceplates have been provided with scaling values.
  For this purpose, the following tes have been adapted: @PG_APC_OpSP_Standard.PDL, @PG_CalcPwrL_Standard.pdl, @PG_CalcWatP_Standard.PDL, @PG_MonAn08_Standard.PDL, @PG_MonAnDi_Standard.PDL, @PG_PeakMon_Standard.pdl, @PG_SPCurve_Standard.PDL, @PG_VoteAnL_Standard.pdl.
- **Enhancement of operation messages**
  In addition to the station name, operator messages also contain the user name.
- Summer / Local Time support for **TimeSwitch**

- Change alarm icon background color
  concerned blocks: PolyCurve, SPCurve, PolygonExt, TimeSwitch, MonAn08, MonAnDi, MonMof, VlvDiv, VlvDsL, UsrM, VoteAnL, VoteDiL, CalcPwrl, LdMgmt8, PeakMon, CalcTHX, HxFct, CalcWatP, APC_OpSP, APC_Supervisor, PMonAn08, PMonAnL, PMonAnDi, PMotSpdcL, PMotSpdL, PMotRevL, PVlvL, PPIDL, PCalcWatP, PHxFct, PVlvMotL, PVlvPosL, PMotL, PUsrM, POpAnL, PMonDi08, PMonDiL
- Certain block types have been extended by the inputs `BlkTypeInf` and `BlkTypeData`. `BlkTypeInf` contains the **Block type number** (`TypNr`) and **block type version** (`VersId`).
  concerned blocks: AccuS, Aggr08, Aggr16, APC_MV, APC_OpSP, APC_Supervisor, ApCmGen, ApMotL, ApMotRevL, ApMotSpdCL, ApPIDConL, ApVlvAnL, ApVlvDS, ApVlvL, BatchIf, CalcPwrL, CalcTHX, CalcWatP, EqmIf, FxCtrl, FxShare, HxFct, ILck4x3L, ILck8x4L, LdMgmt8, MonAn08, MonAnDi, MonDin, MonMof, OpAn16, OpEnum, OptiOT, PCalcWatP, PeakMon, PHxFct, PMonAn08, PMonAnDi, PMonAnL, PMonDi08, PMonDiL, PMotL, PMotRevL, PMotSpdCL, PMotSpdL, PolyCurve, PolygonExt, POpAnL, POpD, POptiOT, PPIDL, PuPa, PUsrM, PVlvL, PVlvMotL, PVlvPosL, Qing, SelFp, SimAn, SimDi, SPCurve, Tank, TcCtrl, TimeSwitch, UnitIf, UsrM, VlvDiv, VlvDsL, VoteAnL, VoteDiL,Xfer

  ⚠ WARNING

  These additional inputs can neither be configured nor switched, and must not be changed under any circumstances. They are for internal use only and any attempt to manipulate them may lead to malfunctions.

Other new IL features

- TIA V16 compatibility and ready for V17
  The use of TIA V17 is dependent on the release for PCS 7. Please refer to the PCS 7 compatibility list.
- **New TCP communication blocks** for redundancy
  - **TCPConR** for establishing redundant TCP connections
  - **TRcvH_AnaVal** for receiving analog values including status information
  - **TRcvH_DigVal** for receiving binary values including status information
  - **TSndH_AnaVal** for sending analog values including status information
  - **TSndH_DigVal** for sending binary values including status information

- **CalcPwrL** and **PulsCon** improving the accuracy of energy metering
  With `Feature.Bit10` you can decide if the energy counter is calculated with `PV` or with input `ECntPerIn`.
  `Feature.Bit10 =0` (Calculated with `PV`):
  The measured value `PV.Value` is accumulated in counter register `AcECntT0, AcECntT1`.
  The measured value has to be connected to the `PV.Value` input.
  The count value is calculated with the following formula:
  `AcECntT0 = AcECntT0 + PV * FactECnt *` (Sum of the current power consumption of the elapsed time) `/ BasePV`
  `Feature.Bit10 =1` (Calculated with `ECntPerIn`):
  `AcECntT0 = ECntPerIn * FactECnt;`
  With change to a new periode the actual counter value is transferred to a buffer value and reset:
  ```
  AcECntT1 = AcECntT0;
  AcECntT0 = 0.0;
  ```
  In each case `Feature.Bit =0/1`, a connection of `PV` as required, to show the current power value.

  - **CalcPwrL** Inputs
  `ECntPerIn`: Accumulated engery counter (current period) for connection with converter blocks (e.g.: PulseCon)
  `ECntMaxIn`: Maximum permissible counter value
  `ECntPer_Unit`: Unit of ECntPerIn
  `FactECnt`: Dimension factor of energy counter
  `Feature Bit10`: 1 = Internal calculations with periodic energy counter input `ECntPerIn`
  - **CalcPwrL** Outputs
  `AcECntT0`: Accumulated energy counter of current period (x(t))
  `AcECntT1`: Accumulated energy counter of last period (x(t-1))
  `EnergyFor`: Energy Forcast Value (analog output)
  `OS_Arc`: Switch for OS archiving, if end of sync. period is reached
  `EndSyncPer`: End of sync. period is reached for reset of energy calculation (e.g. connection to PulseCon).

  The display of the energy and forecast counters are added in the **Standardview** and **Histogram view** of **CalcPwrL**.

- Industry Library Online Help will be avaiable on PUD Manager.

IL for S7:

- **New TCP communication blocks** for redundancy
  - **TCPConR** for establishing redundant TCP connections
  - **S7TRcvHAna** for receiving analog values including status information
  - **S7TRcvHDig** for receiving binary values including status information
  - **S7TSndHAna** for sending analog values including status information
  - **S7TSndHDig** for sending binary values including status information
- **New TCP communication blocks** for none redundancy
  - **TCPCon** for establishing standard TCP connections
  - **S7TRcvAna** for receiving analog values including status information
  - **S7TRcvDig** for receiving binary values including status information
  - **S7TSndAna** for sending analog values including status information
  - **S7TSndDig** for sending binary values including status information
- The **operating area** in the faceplate is now closed again by pressing the Enter key twice.
- The **S7Put, S7Get** blocks now call the correct **SFBs**.

TIA:

- The properties of the **OpD** and **OpA** messages have been corrected

4.2.2 Changes in version 9.1

IL for PCS 7:

- The accuracy of the power and energy calculation of the **CalcPwrL** block, in tandem with the **PulseCon** pulse acquisition has been increased
- **MonAnDi**: In the **standard view** the binary warning limits are displayed in the correct colors
- **MonAnDi**: In the **limit view** the hysteresis values are hidden if you have deactivated the complete limit value monitoring
- **MonAnDi**: In the "**Out of Service**" operating mode, the messages of the `EventT` are suppressed
- **MonAnDI**: the block icon does not show messages in **Oos** operating mode
- **MonAnDI**: the block icon shows the warning linit in the correct collor.
- **VlvDsL**: Improved display of the block symbol. It can now be better aligned with the grid
- **OpAn16**: The `SelFp1` and `SelFp2` inputs have been changed to data type `Any` and thus standardized with the APL
- **Aggr08 / Aggr16**: the block behavior in case of `ChangeTime =0` was improved
- **Aggr08, Aggr16**: the switching behavior depending on `Feature.Bit7` has been improved
- **OpAn16, FxCtrl**: The texts of the buttons for calling further faceplates are now dynamized
- The display of TooltipText and TagName has been improved for the following block icons: OpEnum, OpAn16, MonAnDi, MonDin, MonAn08, MonMof, BatchIf, UnitIf, EqmIf, FxCtrl, FxShare, PolygonExt, PuPa, Quing, Tank, TcCtrl, Xfer

- **ApCmGen**: reports no longer a change in properties when the block is re-insered into a CFC
- **FxCtrl**: unification of messages
- **FxCtrl cascade operation:** The leading **FxCtrl** only switches to the "running" state when the subordinate block is also is in the "running" state
- **Tank**: message texts revised
- **Xfer**: The `SelFp1` and `SelFp2` inputs have been changed to data type `Any` and thus standardized with the APL
- **Xfer**: the call of the **Route** block via faceplate was improved.
- **AccuS**: The function block now has an input for connecting an external time and the AS time is also calculated. Feature bits can be used to select between (local time, AS time or external time)

IL for S7:

- The operating area in the faceplate is now closed again by pressing the Enter key twice.
- The S7Put, S7Get blocks now call the correct SFBs.

TIA:

- The properties of the OpD and OpA messages have been corrected

4.2.3 Update information for version 9.1

The following applies to the software update from V9.0 SP1 to version 9.1:

1.	Make Textual Interconnections	**Yes**
2.	Compile AS	**Complete compilation**
3.	Download AS program	**Complete download**
4.	AS STOP necessary	**Yes (AS STOP is not necessary if a CPU 410-5H with TCiR is used)**
5.	Compile OS	**Complete compilation**

Note

Updating the blocks from the PCS 7 Industry Library with TCiR

"Type import - Changed default value" dialog box

- If information on changed internal local default values in the static area is displayed during type import in the dialog box, these changes are not relevant. A complete download in STOP mode is not necessary.
- If information on changed default values is displayed at block I/Os during type import in the dialog box, these new default values must be applied in the "Update Block Types" dialog.

List of blocks

Table 4-1 List of blocks IL for PCS 7:

Name	Number	Block version	Interface change (AS STOP is not necessary if a CPU 410-5H with TCiR is used)	Code change
AccuS	FB1111	5.5	Yes	Yes
Aggr08	FB1114	5.5	Yes	Yes
Aggr16	FB1113	5.5	Yes	Yes
APC_MpList	FB1184	5.5	No	No
APC_MV	FB1182	5.5	Yes	Yes
APC_OpSP	FB1181	5.5	Yes	Yes
APC_Supervisor	FB1180	5.5	Yes	Yes
ApCmGen	FB1210	5.5	Yes	Yes
ApMotL	FB1200	5.5	Yes	Yes
ApMotRevL	FB1201	5.5	Yes	Yes
ApMotSpdCL	FB1202	5.5	Yes	Yes
ApPIDConL	FB1203	5.5	Yes	Yes
ApVlvAnL	FB1207	5.5	Yes	Yes
ApVlvDS	FB1205	5.5	Yes	Yes
ApVlvL	FB1206	5.5	Yes	Yes
ASRcvH	FB1117	5.5	No	No
ASSendH	FB1116	5.5	No	No
BatchIf	FB1222	5.5	Yes	Yes
CalcPwrL	FB1193	5.5	Yes	Yes
CalcTHX	FB1159	5.5	Yes	Yes
CalcWatP	FB1144	5.5	Yes	Yes
CmDec	FB1213	5.5	No	No
CmEnc	FB1214	5.5	No	No
EqmIf	FB1224	5.5	Yes	Yes
FxCtrl	FB1226	5.5	Yes	Yes
FxDef16	FB1247	5.5	No	No
FxDef32	FB1248	5.5	No	No
FxDef64	FB1249	5.5	No	No
FxShare	FB1227	5.5	Yes	Yes
FxSigBin	FB1250	5.5	Yes	Yes
FxSigInt	FB1251	5.5	Yes	Yes
HxFct	FB1147	5.5	No	No
IL_BR	FB1152	5.5	No	No
IL_BS	FB1151	5.5	No	No

ILck4x3L	FB1133	5.5	Yes	Yes
ILck8x4L	FB1134	5.5	Yes	Yes
LdMgmt8	FB1191	5.5	Yes	Yes
MidStr	FB1215	5.5	No	Yes
MonAn08	FB1102	5.5	Yes	Yes
MonAnDi	FB1104	5.5	Yes	Yes
MonDin	FB1228	5.5	Yes	Yes
MonMof	FB1229	5.5	Yes	Yes
OpAn16	FB1231	5.5	Yes	Yes
OpEnum	FB1232	5.5	Yes	Yes
OptiOT	FB1150	5.5	No	No
ParaCtrl	FB1185	5.5	No	Yes
ParaMem	FB1186	5.5	No	Yes
PCalcWatP	FB1146	5.5	Yes	Yes
PeakMon	FB1190	5.5	Yes	Yes
PHxFct	FB1149	5.5	Yes	Yes
PMonAn08	FB1118	5.5	Yes	Yes
PMonAnDi	FB1119	5.5	Yes	Yes
PMonAnL	FB1120	5.5	Yes	Yes
PMonDi08	FB1122	5.5	Yes	Yes
PMonDiL	FB1121	5.5	Yes	Yes
PMotL	FB1107	5.5	Yes	Yes
PMotRevL	FB1108	5.5	Yes	Yes
PMotSpdCL	FB1110	5.5	Yes	Yes
PMotSpdL	FB1109	5.5	Yes	Yes
PolyCurve	FB1156	5.5	Yes	Yes
PolygonExt	FB1155	5.5	Yes	Yes
POpAnL	FB1123	5.5	Yes	Yes
POpD	FB1131	5.5	Yes	Yes
PPIDL	FB1138	5.5	Yes	Yes
PulseCon	FB1192	5.5	Yes	Yes
PuPa	FB1240	5.5	Yes	Yes
PUsrM	FB1132	5.5	No	No
PVlvL	FB1136	5.5	Yes	Yes
PVlvMotL	FB1143	5.5	Yes	Yes
PVlvPosL	FB1137	5.5	Yes	Yes
Qing	FB1241	5.5	Yes	Yes
RcvH_AnaVal	FB1173	5.5	Yes	No
RcvH_DigVal	FB1171	5.5	Yes	No
SelFp	FB1154	5.5	Yes	No
SelStr	FB1106	5.5	No	No
SimAn	FB1100	5.5	Yes	Yes
SimDi	FB1101	5.5	Yes	Yes
SndH_AnaVal	FB1172	5.5	No	No

SndH_DigVal	FB1170	5.5	No	No
SPCurve	FB1141	5.5	Yes	Yes
SplRng4	FB1175	5.5	No	No
StrMid	FB1216	5.5	No	Yes
Tank	FB1242	5.5	Yes	Yes
TcCfg	FB1252	5.5	No	No
TcCtrl	FB1243	5.5	Yes	Yes
TcCzSel	FB1244	5.5	Yes	Yes
TCPCon	FB910	2.5	Yes	Yes
TCPConR	FB919	2.5		New block type
TcTsSel	FB1245	5.5	Yes	Yes
TimerXP	FB1218	5.5	Yes	Yes
TimeSwitch	FB1142	5.5	Yes	Yes
TRcvAnaVal	FB912	2.3	Yes	Yes
TRcvDigVal	FB911	2.3	Yes	Yes
TRcvHAnaVal	FB916	2.3		New block type
TRcvHDigVal	FB915	2.3		New block type
TSndAnaVal	FB914	2.5	Yes	Yes
TSndDigVal	FB913	2.4	Yes	Yes
TSndHAnaVal	FB918	2.5		New block type
TSndHDigVal	FB917	2.4		New block type
UnitIf	FB1223	5.5	Yes	Yes
UsrM	FB1112	5.5	Yes	Yes
VlvDiv	FB1127	5.5	Yes	Yes
VlvDsL	FB1103	5.5	Yes	Yes
VoteAnL	FB1129	5.5	Yes	Yes
VoteDiL	FB1130	5.5	Yes	Yes
Xfer	FB1246	5.5	Yes	Yes
ASTimeBCD	FC611	5.5	No	No
BitInt	FC1202	5.5	No	No
ConvAbRe	FC610	5.5	No	No
ConvCF	FC609	5.5	No	No
ExtCopy	FC1215	5.5	No	No
GetIDB	FC1201	5.5	No	No
GrabMonTm	FC1200	5.5	No	No
HexElementsToS-truct	FC1214	5.5	No	No
HexToDW	FC1213	5.5	No	No
HexToElemDef	FC1212	5.5	No	No
IntBit	FC1203	5.5	No	No
IPCONVERT	FC1204	5.0		New function
OpA16Dec	FC1216	5.5	No	No
SelB	FC602	5.5	No	No
SelByt	FC604	5.5	No	No

SelC	FC608	5.5	No	No
SelDI	FC607	5.5	No	No
SelDW	FC606	5.5	No	No
SelI	FC603	5.5	No	No
SelR	FC601	5.5	No	No

Table 4-2 List of blocks IL for S7:

Name	**Number**	**Block version**	**Interface change** **(AS STOP is not necessary if a CPU 410-5H with TCiR is used)**	**Code change**
S7AccuS	FB269	2.0	No	No
S7Aggr08	FB277	2.0	No	No
S7Average	FB270	2.0	No	No
S7CalcWatP	FB264	2.0	No	No
S7Get	FB1198	2.0	No	No
S7HxFct	FB267	2.0	No	No
S7MonAn	FB271	2.1	No	No
S7MonAn08	FB272	2.1	Yes	Yes
S7MonAnDi	FB273	2.1	Yes	Yes
S7MonAnGrad	FB274	2.1	Yes	Yes
S7MonDi	FB275	2.1	No	Yes
S7MonDi08	FB276	3.0	Yes	Yes
S7Mot	FB258	2.0	No	No
S7MotRev	FB259	2.0	No	No
S7MotSpd	FB260	2.0	No	No
S7MotSpdC	FB261	3.0	No	No
S7MV3P	FB262	3.0	No	No
S7MVLd	FB302	2.0	No	No
S7OpA	FB278	2.0	No	No
S7OpD	FB279	2.0	No	No
S7PCalcWatP	FB282	3.0	No	No
S7PHxFct	FB285	3.0	No	No
S7PIDCon	FB265	2.0	No	No
S7PMonAn	FB286	3.0	No	No
S7PMonAn08	FB287	3.0	No	No
S7PMonAnDi	FB288	3.0	No	No
S7PMonAnGrad	FB289	3.0	No	No
S7PMonDi	FB290	3.0	No	No
S7PMonDi08	FB291	3.0	No	No
S7PMot	FB292	3.1	No	No
S7PMotRev	FB293	3.1	No	No
S7PMotSpd	FB294	3.1	No	No

S7PMotSpdC	FB295	3.1	No	No
S7PMV3P	FB296	3.0	No	No
S7POpA	FB297	3.0	No	No
S7POpD	FB298	3.0	No	No
S7PPID	FB283	3.0	No	No
S7PUsrM	FB309	1.0	No	No
S7Put	FB1199	2.0	No	No
S7PVlv	FB301	3.0	No	No
S7PVlvMot	FB307	3.0	No	No
S7RcvAna	FB333	1.0	No	No
S7RcvDig	FB331	1.0	No	No
S7RcvHAna	FB337	1.0	No	No
S7RcvHDig	FB335	1.0	No	No
S7SndAna	FB332	1.0	No	No
S7SndDig	FB330	1.0	No	No
S7SndHAna	FB336	1.0	No	No
S7SndHDig	FB334	1.0	No	No
S7SplitRange	FB303	2.0	No	No
S7TiSwitch	FB308	1.0	No	No
S7TRcvAna	FB313	1.4		New block type
S7TRcvDig	FB311	1.3		New block type
S7TRcvHAna	FB317	1.4		New block type
S7TRcvHDig	FB315	1.4		New block type
S7TSndAna	FB312	1.5		New block type
S7TSndDig	FB310	1.3		New block type
S7TSndHAna	FB316	1.4		New block type
S7TSndHDig	FB314	1.4		New block type
S7UsrM	FB280	2.0	No	No
S7Vlv	FB263	2.0	No	No
S7VlvMot	FB306	3.0	No	No
TCPCon	FB318	2.5		New block type
TCPConR	FB319	2.6		New block type
IPCONVERT	FC260	2.0		New function
S7ASTimeBCD	FC261	1.0	No	No
S7ConvAbRe	FC256	1.0	No	No
S7ConvCF	FC257	1.0	No	No
S7SelB	FC258	1.0	No	No
S7SelI	FC259	1.0	No	No
S7SelR	FC262	1.0	No	No
TCALL	FC263	2.2		New function

Note

- If "No" is listed in the column "Interface change" and in the column "Code change", only attributes, message texts and/or version number have been changed.
- If "Yes" is listed in the column "Interface change" and "No" in the column "Code change", the interfaces were prepared for a future function.

Information on configuration and operation 5

Industry Library for PCS 7:

- The Industry Library for PCS 7 is an expansion of the PCS 7 Advanced Process Library (APL). The supplied blocks can only be used in connection with the blocks of the APL.

Industry Library for S7

- In CFC, the default areas for the DB and FC range of numbers must be adapted in the "Settings for Compile/Download" menu.

Web capability

- To use the Web client, all functions (*.fct files) must be copied from the directory WinCC installation path ...\SIEMENS\WINCC\aplib\IL_PCS7 or ...\IL_S7 to the directory project path ... \wincproj\OS- Name\Library\WebClient (Web client folder must be created by user) of the Web server project. Then the header must be regenerated (function in global C Script Editor).

Notes on installation 6

6.1 Scope of delivery

The scope of delivery includes the following library:

- PCS 7 Industry Library V9.1

Note

The software includes the necessary blocks for the AS as well as the required picture objects, faceplates and functions for the OS.

The setup installs the libraries with the AS blocks as well as the faceplates for operator control and monitoring of plant objects (block icons, group picture).

Faceplates in the project must be updated with the OS project editor, "Basis data" tab.

6.2 Hardware requirements

The installation is subject to the conditions of SIMATIC PCS 7 V9.1.

The Industry Library for PCS 7 requires:

- The requirements of the SIMATIC PCS 7 Advanced Process Library V9.1 apply.

The Industry Library for S7 requires:

- Recommendation for use of the library as of S7-315 PN/DP and as of firmware V3.1 and higher

The Industry Library for WinCC Comfort requires:

- Recommendation for use of the library as of TP1200 (12") and higher

Industry Library for STEP 7 Professional requires:

- Recommendation for use of the library as of CPU 1515-2 PN with FW V2.1

6.3 Software requirements

The blocks of the Industry Library for PCS 7 require at least:

- SIMATIC PCS 7 V9.1 with installed Industry Library V9.1 for PCS 7.

The blocks of the Industry Library for S7 require at least:

- SIMATIC PCS 7 V9.1 or above with installed Industry Library V9.1 for S7.

or

- STEP 7 V5.6 SP2 HF6 , AS-OS-Engineering V9.1 SIMATIC CFC V9.0 SP5 Upd2 and SIMATIC WinCC V7.5 SP2 Upd1

The function blocks of the Industry Library for TIA Portal require at least:

- SIMATIC Step7 Professional V16

Note

Installation requirement

This update installation terminates if no V9.1 installation is present on the target system.

Note

Installation of TIA Portal and PCS 7 (Side-by-Side installation) and use of WinCC Comfort.

The Side-by-Side installation and use of WinCC Comfort require PCS 7 V9.1 and TIA Portal V16.

6.4 Installing PCS 7 Industry Library

Note

Before you install the software, versions of the Industry Library <V9.1 must be uninstalled (see section Uninstalling PCS 7 Industry Library).

When an Update Version is installed, the setup program checks to determine whether the full version is installed. If an installation of the full version is not found, the update installation terminates.

Exit all applications before you start setup.

Install the library via the PCS 7 system setup or start the Setup.exe program of the PCS 7 Industry Library. You will receive all further information during the installation process.

The library is copied to the same drive on which the PCS 7 basic software is installed. Installation requires about 400 MB of free memory on the hard disk.

After the installation, you can find the blocks of the PCS 7 Industry Library in the libraries "Industry Lib PCS 7 V91" or "Industry Lib S7 V91".

Note

The version of the PCS 7 Industry Library you need depends on the version of the PCS 7 Advanced Process Library used in the project. The version of IL must be adapted to match the APL version used and is neither backward nor upward compatible unless specified otherwise in the section "Software requirements".

To update your AS project, copy the blocks to your project. Then perform a block type import.

The following components are installed by the setup:

- Industry Library for PCS 7 in the directory ...\SIEMENS\STEP7\S7LIBS\IL_PCS_7
- Industry Library for S7 in the directory ...\SIEMENS\STEP7\S7LIBS\IL_S7
- WinCC faceplates (block icons, group pictures, loops) in the directory ...\SIEMENS\WINCC \Options\PDL\IL_PCS7 or ...\IL_S7
- WinCC project functions in the directory ...\SIEMENS\WINCC\aplib\IL_PCS7 or ...\IL_S7
- Function blocks for TIA Communication (IndustryLibTIA_V16) in the directory ...\SIEMENS \INDUSTRY LIBRARY
- The user documentation in the directory ...\SIEMENS\STEP7\S7MANUAL\IL_PCS7 or ...\IL_S7
- Library WinCC Comfort faceplates (IL_PCS7_V16.zal16 and IL_S7_ V16.zal16) in the directory ...\SIEMENS\INDUSTRY LIBRARY

6.5 Uninstalling PCS 7 Industry Library

You have to remove software in accordance with the MS Windows guidelines.

To do so, open the software management in the Windows Control Panel (Windows Start menu: Start → Setting → Control Panel → Software). Select the function "Uninstall or change a program" and then the component you want to uninstall.

Change history of PCS 7 Industry Library 7

Changes since delivery release of PCS 7 Industry Library Readme (Online)

Version	Edition	Change
2021-11-19 (ONLINE)	11/2021	Delivery status PCS 7 Industry Library V9.1