TechTip: Overview of the PLC properties

Contents

1. Use

This TechTip helps you to set the required properties at the PLC connection points and PLC devices for a PLC data exchange with PLC configuration programs in the format "AutomationML AR APC" (short: "AML AR APC").

For the fundamental description of a property please refer to the current Eplan help:

- Terminals, Cables, Plugs, and PLC Information > PLC > Basics

- Eplan Properties: Overview

This TechTip provides supplementary information about the properties.

With Version 2.7 of Eplan Electric P8 numerous new check runs were implemented in the PLC field which help you in configuring the PLC data exchange.

Information for reading

Structure of the individual tables:

Property	<ID>
Input format	
Notes (for example from parts management, designation in other PLC configuration programs)	
Particular aspects for PLC data exchange	

2. AutomationML GUID

GUIDs are used for identification of the individual objects during data exchange using the AutomationML format. These GUIDs are generated as required before a data export (the project must therefore be writeable for a data export) and should no longer be modified by the user:

AutomationML GUID	25030
In accordance with AutomationML specification. https://www.automationml.org/	

AutomationML GUID 2	25031 [1...12]
In accordance with AutomationML specification. https://www.automationml.org/	
Current Index 1 is used: - *At PLC connection points (input or output)* - *At PLC cards*	

AutomationML GUID (accessories)	20399 [1...50]
In accordance with AutomationML specification. https://www.automationml.org/	
A PLC type designation must be entered for these parts in the parts management to allow export of the accessory parts.	

An AutomationML GUID has the format "xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx", with "x" standing for one of the characters "0 1 2 3 4 5 6 7 8 9 a b c d e f A B C D E F".

3. Settings at PLC devices

PLC devices are always to be configured as PLC boxes. This includes devices with I/O connection points or devices that require further PLC settings (PLC structure data).

Tip: Use the "Edit in table" function to achieve effective editing of the data.

Rack	**20427**
Numerical value equal to or greater than 0	
Designation in other PLC configuration programs: Rack	
The value has to be filled in at all the PLC cards that represent either a rack or a head station. *Numbering of the racks begins with the value 0 ("Main rack") at each station. Numbering is carried out without gaps and has to be unique within a station. Extension racks therefore have values greater than 0.* *If the rack is simultaneously a head station, an additional* Bus coupler / head station *check box has to be activated for the AutomationML AR APC format.* *Racks without specification of a PLC type designation or of a device description file with specification of an index are handled as virtual racks when imported into Eplan, meaning that a separate PLC box is not created to this purpose.* *iQ Works: maximum value: 7* *TwinCAT3: always 0 since there is only one rack per workstation.*	

PLC card is placed on rack ID	**20410**
Numerical value equal to or greater than 0	
The value has to be filled in at all the PLC cards that are mounted on a rack or are adjoined at a head station.	

PLC card is placed on head station	**20444**
Check box	
Is taken from the parts management	
AML AR APC: Identifies a PLC card which is placed on the head station or is integrated into it and not adjoined next to the head station, e.g. bus adapter.	

Position (slot / module)	20411
Numerical value	
Designation in other PLC configuration programs: Slot	
The value has to be filled in at all the PLC cards that are mounted on a rack or are adjoined at a head station.	

Drive	20576 [1…64]
Any string	
Specifies the association of a device to a drive. *A device (for example, power converter) can belong to several drives, a motor usually only belongs to one drive.* *Exchange as of AML AR APC Version 1.2.0.*	

Drive: Device type	20577
Any string	
The specification of this value takes place in the part reference data. For devices that are assigned to a drive you specify the type of device, for example "Synchronous motor", "Inverter", "Encoder" ,etc. more exactly.	

Device tag	20006
String in accordance with the rules for Device tag	
STEP 7 Classic V5.6: limited to 32 characters *STEP 7 TIA Portal:* *- AML AR APC Version 1.0.0: limited to 32 characters for the function designation and to 22 characters for the remaining designation (location designations and device tags).* *- As of AML AR APC Version 1.1.0: limited to 32 characters for the function designation, and limited to 22 characters for the location designation and to 54 characters for the device tag.*	

Bus coupler / head station	20164
Check box	
Is taken from the parts management.	
AML AR APC: Identifies a head station which is simultaneously a rack. *STEP 7 Classic: not used.*	

Bus distribution device	20189
Check box	
Is taken from the parts management.	
Is not used for: AML AR APC, STEP 7 Classic *PLC cards identified as bus distribution devices are not taken into consideration in the check runs 4035, 4037 and 4072.*	

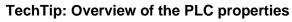| CPU	20167
Check box	
Is taken from the parts management.	
Every PLC box that represents a CPU is to be identified as a CPU by activating the check box. *For a successful data exchange at least one CPU must exist on the main rack within a configuration project.* *AML AR APC: The assignment list ("TagTable") is only exported at PLC cards which are identified as a CPU via the check box.*	

CPU: Name	**20253 [1...128]**
Any string	

Value has to be filled.

The property CPU: Name *is specified in all modules as a complete name in the form [Configuration project].[Station ID].[CPU identifier], for example* Siemens SIMATIC S7.Station 300.1. *The CPU name has to be unique within the Eplan project.*

The correct specification of the CPU name at the PLC box is required so that the assignment list ("TagTable") is exported completely.

128 input fields (indices) are available for entering the CPU name. Currently only the first entry is used for data exchange.

AML AR APC: The CPU identifier must be an integer equal to or larger 1.

STEP 7 Classic: permitted values for the CPU identifier are 1, 2, 3 or 4

Function text	**20031**
Any string, multi-language	
Designation in other PLC configuration programs: Comment	

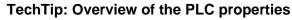*STEP 7 Classic: limited to 80 characters. Quotation marks (") and line breaks are impermissible.*

STEP 7 TIA Portal: Line breaks are impermissible.

AML AR APC: The function text is always output in all languages stored at the function text.

Integrated module	**20289**
Check box	

Identifies an integrated module, the PLC box in this case often has no own PLC type designation.

Configuration project	20161
Any string, a decimal point (".") is not permissible.	
The value has to be filled at all the PLC cards. *All* objects *assigned to the same configuration project belong together and represent a PLC configuration. The data of the devices specified in this manner can be exchanged with the PLC configuration programs of the PLC manufacturers.*	

Safety address: Target	20439
Numerical value, range 1 to 65535	
Safety address at safety modules (for example F-address for PROFIsafe). *In general this value is entered at the modules that are participants of a safety network. Detailed information on this is available from the PLC manufacturer.* *Exchange as of AML AR APC Version 1.1.0.*	

Safety address: Source	20615
Numerical value, range 1 to 65535	
Safety address at safety modules (for example F-address for PROFIsafe). *In general this value is entered at the module that is the source of the safety network. Detailed information on this is available from the PLC manufacturer.* *Exchange as of AML AR APC Version 1.1.0.*	

Safety address: Upper value	20616
Numerical value, range 1 to 65535	
The value is filled during the import of PLC configuration files. *Detailed information on this is available from the PLC manufacturer.* *Exchange as of AML AR APC Version 1.1.0.*	

Safety address: Lower value	**20617**
Numerical value, range 1 to 65535	
The value is filled during the import of PLC configuration files. *Detailed information on this is available from the PLC manufacturer.* *Exchange as of AML AR APC Version 1.1.0.*	

PLC card name	**20437**
Any string	
Designation in other PLC configuration programs: Name, module	
The value must be filled and contains the designation of the PLC box. Depending on whether the PLC box represents a PLC card, a rack or a CPU, the PLC card name must be unique within a rack, a station or a configuration project.	

PLC box represents:	*Unique PLC card name required within:*
PLC card	*Rack*
Rack	*Configuration project*
CPU or head station	*Configuration project*

STEP 7 Classic: The Object description is used instead of the PLC card name.

iQ-Works 3: limited to 32 characters. For impermissible characters please refer to the corresponding reference manual of the manufacturer.

PLC station: ID	**20408**
Any string, a decimal point (".") is not permissible.	
Value has to be filled at all the PLC cards and specifies the association of the PLC card to a station. *iQ-Works 3: limited to 32 characters. For impermissible characters please refer to the corresponding reference manual of the manufacturer.*	

PLC station: Type	**20409**
String, depending on the target system	
Is taken from the parts management.	
The value is specified at PLC boxes that represent a CPU or a head station. *Value must be used for STEP 7 Classic: Valid values are S7300, S7400, S7400H, PC_BASED, HMI_BASED* *Value is to be used for STEP 7 TIA Portal : Valid values are amongst others S7300, S7400, S71200, S71500, ET200AL, PC, ET200ecoPN, ET200SP, ET200ISP, ET200M, ET200S, ET200Pro, ASi, S7mEC, SCALANCE/X200IRT*	

PLC station: TemplateIdentifier	**20614**
Any string	
The value is specified at PLC boxes that represent a CPU or a head station. *Name of the template which is used in the PLC configuration program for the definition of configurable properties. Some PLC configuration programs support a template technology at which only the reference to the template is exchanged. Details are provided in the TechTip "**TechTip-PLC-data-exchange-with-device-related-configuration-values**".* *Exchange as of AML AR APC Version 1.2.0.*	

You will find detailed information on the use of **PLC type designation**, **Device description: File name** and **Device description: Index in file** in the Eplan Help in the section "Data Exchange of PLC Configuration Files" with the keyword "Device identification".

PLC type designation	**20416**

String

Is taken from the parts management. Designation in other PLC configuration programs: Order number, Catalog number

The value has to be filled in at all the PLC cards if the Device description: File name is not filled in.

*As a rule the original order number under observance of any blanks and separators is to be specified. Every PLC card can only have **one** PLC type designation. A combination of several parts by entering several PLC type designations is not supported. If the device is divided into subdevices, the PLC type designations are entered in the corresponding properties PLC subdevice [n]: PLC type designation.*

STEP 7 Classic or STEP 7 TIA Portal:
If the original type designation from the hardware catalog contains the character "x" as a placeholder character, each "x" in Eplan must be replaced by a "?" for the device to be recognized in TIA Portal during importing.
Example: For some racks, "xxx" must be replaced by "???".

Device description: File name	**20415**

File name of the device description file with file name extension and without file path specification

Is taken from the parts management.

The value has to be filled in at all the PLC cards if the PLC type designation is not filled in.

Is used together with Device description: Index in file.

Is only exported if no PLC type designation is specified.

The specified device description file must be installed in the hardware catalog of the PLC configuration program.

Device description: Index in file	**20381**
Reference to the device in the file specified by means of *device description: File name*	
Is taken from the parts management.	

Is used together with Device description: File name*.*

STEP 7 Classic: The Object description *is used instead of this property.*

Note: The indexes of the device description files additionally have the specification of a preceding context in the AML file (for example "M/1000"). This context is automatically detected and supplemented by Eplan during importing and exporting and therefore does not have to be explicitly specified in Eplan during the configuration:

- *D/ (Device)*
- *R/ (Rack)*
- *DAP/ (Device Access Point)*
- *M/ (Module)*

If the index contains forward slashes (for example "M/1000/2"), the context is not detected automatically and must be entered as well.

The context (SM/) must always be specified for submodules.

Object description	**20417**
Any string	
Is taken from the parts management. Designation in other PLC configuration programs: Module, DP identifier	

Designation of the PLC box.

AML AR APC: Is used when the PLC card name *is not filled.*

STEP 7 Classic: If a device description file is specified, this property is used instead of Device description: Index in file*.*

PLC device: TemplateIdentifier	20580
Any string	
The value is specified at PLC boxes which do not represent a CPU or a head station. *Name of the template which is used in the PLC configuration program for the definition of configurable properties. Some PLC configuration programs support a template technology at which only the reference to the template is exchanged. Details are provided in the TechTip "**TechTip-PLC-data-exchange-with-device-related-configuration-values**". Exchange as of AML AR APC Version 1.2.0.*	

Start address of PLC card, Start address 2 of PLC card	20419, 20255
Numerical value (decimal system)	
Start value for the address range of an input or output card. *Start address of PLC card: Start value for the address range of the inputs. Can also be used for outputs if the card only has outputs.* *Start address 2 of PLC card: Start value for the address range of the outputs.* *iQ-Works 3: Values are a multiple of 8 (0, 8, 16, etc.).*	

Address range (SIEMENS STEP 7 Classic), Address range 2 (SIEMENS STEP 7 Classic)	20432, 20299
Numerical value	
Is taken from the parts management.	
Address range (SIEMENS STEP 7 Classic): Specification for inputs. Can also be used for outputs if the card only has outputs. *Address range (SIEMENS STEP 7 Classic) 2: Specification for outputs.* *Is only used at STEP 7 Classic and, depending on the PLC card, determines the number of input / output bits or bytes.* *If the* address range *is not specified for STEP 7 Classic or is specified incorrectly, the* Start address *is not taken into consideration during data import in STEP 7 Classic.*	

PLC device: Data length (inputs), PLC device: Data length (outputs)	20548, 20550
Numerical value	
Is taken from the parts management.	

Version	20418
Any string	
Is taken from the parts management. Designation in other PLC configuration programs: Firmware	
STEP 7 Classic: if "Latest" is specified, the most recent firmware version is used. *STEP 7 TIA Portal: If nothing is specified, the most recent version is used.*	

Specific PLC devices consist of multiple integrated modules (PLC subdevices), that each have their own Address ranges and start addresses. Such a device can consist, for example, of an internal CPU module, an internal input / output module, internal analog module as well as an internal counter module - however with only one part number. In order to map such logical function units within a PLC device, up to twelve PLC subdevices are available to you. Each PLC subdevice is defined by the corresponding properties (x in the following describes the number of PLC subdevice 1…12). You can find further information in the TechTip "**TechTip-Preparation-of-master-data-for-PLC-data-exchange**" in the chapter "PLC devices with subdevices".

PLC subdevices are exported if they have at least one start address or one bus port or one I/O connection point or one Device identification.
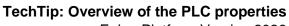
Note:

If a PLC card has no PLC subdevices (meaning that it only consists of one module), definitions for these can be omitted. The value "0" is entered at the **PLC subdevice: Index** property at the associated PLC connection points.

You can obtain further information on the definition of subdevices from the manufacturer of the PLC device or in the TechTip "**TechTip-Configuring-PLC-devices-with-device-description-files**".

PLC subdevice x: Position (slot / module)	20533 ff.
Numerical value	
Is taken from the parts management.	

PLC subdevice x: Name	**20521 ff.**
Any string	
Is taken from the parts management.	

PLC subdevice x: Start address (inputs)	**20454, 20382, 20392 ff. 20452 ff.**
Numerical value (decimal system)	
Start value for inputs. *iQ-Works 3: Values are a multiple of 8 (0, 8, 16, etc.).*	

PLC subdevice: Start address (outputs)	**20455 ff., 20478 ff., 20515 ff.**
Numerical value (decimal system)	
Start value for outputs. *iQ-Works 3: Values are a multiple of 8 (0, 8, 16, etc.).*	

PLC subdevice x: Data length (inputs), **PLC subdevice x: Data length (outputs)**	**20547 ff.,** **20549 ff.**
Numerical value	
Is taken from the parts management.	

PLC subdevice x: PLC type designation	**22365, 22341 ff.**
Any string	
Is taken from the parts management.	
This property has to be filled for PLC subdevices if these are expected as independent devices in the PLC configuration program. *As a rule the original order number under observance of any blanks and separators is to be specified. Every PLC subdevice can only have* **one** *PLC type designation. A combination of several parts by entering several PLC type designations is not supported.*	

PLC subdevice x: Device description: Index in file	22366, 22352 ff.
Reference to the device in the device description file that is entered at the PLC box (main device) in the property **Device description: File name**.	
This property has to be filled for PLC subdevices if these are expected as independent devices in the PLC configuration program and are identified via a device description file and the associated index. *Notes: The device description file is specified at the PLC box (main device). The indexes of the device description files additionally have the specification of a preceding context in the AML file (for example "M/1000"). For a PLC subdevice this context **must** always be specified during the configuration:* • *D/ (Device)* • *R/ (Rack)* • *DAP/ (Device Access Point)* • *M/ (Module)* • *SM/ (Submodule)*	

PLC subdevice x: Safety address: Target	20622 ff.
Numerical value, range 1 to 65535	
Safety address at PLC subdevices of safety modules (for example F-address for PROFIsafe). *In general this value is entered at the modules that are participants of a safety network. Detailed information on this is available from the PLC manufacturer.* *Exchange as of AML AR APC Version 1.1.0.*	

PLC subdevice x: Safety address: Source	20634 ff.
Numerical value, range 1 to 65535	
Safety address at PLC subdevices of safety modules (for example F-address for PROFIsafe). *In general this value is entered at the module that is the source of the safety network. Detailed information on this is available from the PLC manufacturer.* *Exchange as of AML AR APC Version 1.1.0.*	

PLC subdevice x: Safety address: Upper value	**20646 ff.**
Numerical value, range 1 to 65535	
The value is filled during the import of PLC configuration files. *Detailed information on this is available from the PLC manufacturer.* *Exchange as of AML AR APC Version 1.1.0.*	

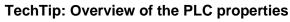| **PLC subdevice x: Safety address: Lower value**	**20658 ff.**
Numerical value, range 1 to 65535	
The value is filled during the import of PLC configuration files. *Detailed information on this is available from the PLC manufacturer.* *Exchange as of AML AR APC Version 1.1.0.*	

Manage bus ports at the superior device	**20620**
Check box	
This property can be used to manage all the bus ports of the device and the plugged-in devices together for devices into which further devices are plugged. To do so activate this property at the PLC boxes of the plugged-in devices. The superior device and the associated inserted devices are identified by means of the properties **Rack** *and* **PLC card is placed on rack ID**.	

4. Settings at PLC connection points (inputs / outputs)

Address	20400
String in accordance with the specification under <u>PLC-specific settings > Addresses</u>	
The value must conform to the address format of the PLC configuration program. *The address must be unique within a CPU. In this context the CPU is identified by means of the full CPU name in the form [Configuration project].[Station ID].[CPU identifier].* *AML AR APC: Addresses are always linked with the symbolic address. If no symbolic address is available in the AML file, no address can be imported.*	

Symbolic address	20404
Any string	
Designation in other PLC configuration programs: Symbol, Variable, Tag	

STEP 7 Classic: limited to 24 characters. Quotation marks (") are impermissible.
 	
iQ-Works 3: limited to 256 characters. Blanks and special characters are impermissible.
 	
Rockwell: In accordance with IEC61131-3 blanks are impermissible.
 	
PLCNext Engineer: In accordance with IEC61131-3 blanks are impermissible.
 	
AML AR APC: The assignment list ("TagTable") is only exported under the following conditions at the PLC box which is selected as the **CPU***:*
 	
   -   *The symbolic address is filled.*
   -   *The corresponding* **Data type** *is set.*
   -   *At the associated PLC box the property* <u>CPU: Name</u> *is correctly filled.*
   - *If multiple connection points with the same channel designation are available, the* **Symbolic address** *of the first connection point is exported.*	

Symbolic address: Group	20610
Any string	
AML AR APC: With this property you can group areas of symbolic addresses in the assignment list, for example inputs, outputs, safety addresses, etc. *The property determines the name of the assignment list. All symbolic addresses with the same value of this property are exported to an assignment list with this name.* *If this property is empty, the export is carried out to the default assignment list.*	

Symbolic address: UDT (name)	20618
Any string, a decimal point (".") is not permissible.	
Provides the possibility to nest and manage the symbolic address of the PLC connection point within a user-defined data type. The property determines the name of the UDT (thus corresponds to the name under which the UDT is used in a PLC configuration program). *When using this property you additionally have to specify the data type in the **Symbolic address: UDT (data type)** property.*	

Symbolic address: UDT (data type)	20619
Any string, a decimal point (".") is not permissible.	
The property determines the type of UDT. The actual structure of the UDT is only required in the PLC configuration program and only specified there.	

Connection point description	20039
Any string	
Is taken from the parts management.	
The connection point description has to be unique within a channel. *The connection point description may occur several times at card power supplies.*	

Connection point designation	20038
Any string	
Is taken from the parts management.	
The connection point designation has to be unique within a PLC box.	

Data type	20405
String in accordance with the selection list under PLC-specific settings > Addresses	
Value has to be filled.	
Valid values: BOOL, BYTE, WORD, DWORD, REAL, LWORD, INT, DINT, LINT.	

Function text	20031
Any string, multi-language	
Designation in other PLC configuration programs: Remark, Comment	
STEP 7 Classic: limited to 80 characters. Quotation marks (") and line breaks are impermissible.	
STEP 7 TIA Portal: Line breaks are impermissible.	
AML AR APC: The function text is always output in all languages stored at the function text.	

Channel designation	20428
(Numerical) value equal to or greater than 0	
Is taken from the parts management.	
The value has to be filled and has to be in accordance with the method of counting and the number system of the PLC configuration program.	
STEP 7 Classic: Inputs are specified with "Inx", outputs with "Outx", whereby x is a consecutive value equal to or greater than 0.	

PLC subdevice: Index	20384
Numerical value in the range of 0 to 12	
Is taken from the parts management.	
Specification to which PLC subdevice this PLC connection point belongs. *The value "0" is to be entered here if master data (for example macros) from versions before 2.7.* *See also the explanations on the properties* **PLC subdevice x** *in the section "Settings at PLC devices" earlier in this document.*	

5. Settings at PLC connection points (bus ports)

Connection point designation	**20038**
Any string	
Is taken from the parts management.	
The connection point designation is not filled at single-line bus ports! *Leave these empty also at the function templates in the parts management.* *Use the plug designation instead.*	

Plug designation	**20431**
Any string	
Is taken from the parts management.	
Designation in other PLC configuration programs: Label	

Value has to be filled at bus ports.

STEP 7 TIA Portal:

ASi (single device)	*Depending on the device and bus port.* *Common values: "AS-i", "ADDR"*
ASi (double device)	*ADDR* *The values "ADDR1" and "ADDR2" are generated during exporting for the two (internal) devices.*
Ethernet, PROFINET	*Depending on the device and bus port.* *Common values: "P1", "P2", "P1 R" "P2 R"*
Other bus systems	*Depending on the device and bus port.* *Common values: "X1", "X2" "X3"*

TwinCAT3: Depending on the device and bus port. Common values: "X001", "X1", "X2 OUT"

Since Version 2.8 the plug designation *is identifying together with the bus interface name.*

Bus interface: Name	**20447**
Any string	

Serves to group bus ports for the export of Ethernet-based bus systems. Associated bus ports are combined into a logical unit via this name. To do this use the bus ports of the type "Network / bus cable connection point, general".

Value has to be filled at Ethernet-based bus ports in accordance with the hardware specifications of the PLC manufacturer.

Since Version 2.8 the plug designation *is identifying together with the bus interface name.*

STEP 7 TIA Portal: Depending on the device and bus port. Common values: "X1", "X2", "X3", "Switch" at so called "unmanaged switches".

TwinCAT3: Depending on the device and bus port. Common values: "EC1", "EC21", "LAN1"

Bus interface: Main bus port	**20448**
Check box	

Identifies a bus port within a bus interface as the main bus port. This bus port represents the bus interface and contains the data relevant for the data exchange (among others Physical network: Bus ID / item number, MasterSystemId*).*
Exactly one main bus port must exist within an interface. This is of the type "Network / bus cable connection point, general".

Recommendation: Identify the first bus port as the main bus port.

Bus system	**20308**
Selection list	
The following bus systems are currently supported: *STEP 7 Classic:* MPI Bus, PROFIBUS, PROFINET *STEP 7 TIA Portal:* MPI Bus, PROFIBUS, Ethernet, PROFINET, ASi *TwinCAT3:* EtherCAT *Interconnection of extension racks:* Local-Bus: Extension	

Physical network: Name	**20413**
Any string	
Value has to be filled. *The name of the physical network has to be unique within the configuration project. Only one bus system can exist within a physical network.*	

Physical network: Bus ID / item number	**20311**
Any string. Depending on the bus system, the value is a simple number, an IP address or a combination of letters and numbers.	
STEP 7 Classic: A device number is specified at the connected slaves instead of the IP address at the PROFINET bus system.	

Physical network: Bus ID / item number 2	**20386**
Any string	
Second bus address, currently for ASi devices.	

Data transfer rate	**20313**
String	
Is only used at STEP 7 Classic. Specification is effected as a numerical value with unit (bps, Kbps, Mbps or Gbps).	

Integrated module	**20289**
Check box	
Is only used at STEP 7 Classic and identifies an integrated bus interface.	

Configuration project	**20161**
Any string, a decimal point (".") is not permissible.	
A configuration project deviating from the PLC box can be specified here. *All* objects *assigned to the same configuration project belong together and represent a PLC configuration. The data of the devices specified in this manner can be exchanged with the PLC configuration programs of the PLC manufacturers.*	

Logical network: Name	**20414**
Any string	

The name of the logical network has to be unique within a physical network.

STEP 7 Classic: Name of the IO controller for the IO system or of the DP master for the DP master system

AML AR APC: Value can be used as with STEP 7 Classic

Schneider Unity Pro: Topology address for the bus port

For the case of PLC data exchange for IO systems all the PLC boxes with the same logical network name belong to one IO system. The IO system specifies which station (in TIA Portal "IO-Device") is controlled by which IO controller. This is comparable to the specification of the CPU association: While the CPU association is PLC card-oriented, the IO system is station-oriented.
Within an IO system, there is always a master that is designated through the check box Logical network: Bus port is master.

When the "PROFIBUS" bus system is used, the "IO system" is similar to the "DP master system", the "IO controller" is similar to the "DP master" and the "IO device" is similar to the "DP slave".

Logical network: Bus port is master	**20310**
Check box	

If the bus port is a master in this logical network, activate the check box.

Is used for: AML AR APC, STEP 7 Classic, TwinCAT2 and RSLogixArchitect

Within an IO system (for Ethernet-based bus systems) or a DP master system (for PROFIBUS), that bus port must always be designated that is master for the assignment.

MasterSystemID	20334
Numerical value	

*Value corresponds to the network number of an IO system (for Ethernet-based bus systems) or DP master systems (for PROFIBUS) and is specified at that bus port that is a master in this logical network (check box*Logical network: Bus port is master*).*
 	
Value must be used for STEP 7 Classic.
 	
Value can be used for STEP 7 TIA Portal.
 	
Value range:
 	
   -   *PROFIBUS: 1 to 99*
   - *Ethernet-based bus systems: equal to or greater than 100*	

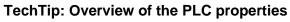| PLC subdevice: Index	20384
Numerical value in the range of 0 to 12	
Is taken from the parts management.	
Specification to which PLC subdevice this PLC connection point belongs. *The value "0" is to be entered here if master data (for example macros) from versions before 2.7.* *See also the explanations on the properties **PLC subdevice x** in the section "Settings at PLC devices" earlier in this document.*	

Subnet mask	20446
String in accordance with the rules for subnet masks	
Value can be filled. *A filled value is output for Ethernet-based bus systems.*	

Standard gateway	**20613**
String in accordance with the rules for IP addresses	

Value can be filled.

A filled value is output forEthernet-based bus systems.

Exchange as of AML AR APC Version 1.2.0.

Subslot	**20312**
Numerical value	

Value has to be filled.

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ASi (single device)	*0*
ASi (double device)	*0* *The values "1" and "2" are generated during exporting for the two (internal) devices.*
Ethernet, PROFINET	*Depending on the device and bus port.* *Common values: 0 to 3*
Other bus systems	*Depending on the device and bus port.* *Common values: 0 to 3*

DNS/PROFINET device name	**20309**
Any string	

Value can be filled.

A filled value is output forEthernet-based bus systems.

Exchange as of AML AR APC Version 1.2.0.

6. Settings at bus-compatible devices and devices that are assigned to a drive

In addition to the PLC devices, bus-capable devices and devices that are assigned to a drive, are exchanged during the PLC data exchange.

Bus-capable devices are converters, motors, valve terminals, etc. that, in addition to the actual function, have one or more bus ports, but no I/O connection points. Such devices can be defined via the common DT or be configured as a black box.

The specification of the configuration project is required for the PLC data exchange. For devices which are assigned to a drive, the **Drive** (ID: 20576 [1…64]) must also be specified. These can be exchanged as of AML AR APC Version 1.2.0.

The following properties are available for these devices, details can be found in the section "Settings at PLC devices".

20576 [1…64]	Drive
20006	Device tag
20164	Bus coupler / head station
20189	Bus distribution device
20031	Function text
20415	Device description: File name
20381	Device description: Index in file
20577	Device type
20161	Configuration project
20417	Object description
20408	PLC station: ID
20409	PLC station: Type
20416	PLC type designation
20418	Version

If you require further PLC settings (PLC structure data), the devices (for example CPU, network devices, I/O cards, communication modules, switches and others) have to be configured as a PLC box. These settings are described in the section "Settings at PLC devices".

7. Specification of bus data at the PLC box

In previous Eplan versions you had the possibility at the PLC box to also specify bus data on the **PLC structure data** tab. The properties are write-protected as of Version 2022. Older projects can still have data entered here:

20308	Bus system
20311	Physical network: Bus ID / item number
20386	Physical network: Bus ID / item number 2
20413	Physical network: Name
20446	Subnet mask

The specification of bus data at PLC boxes was only required for special export formats.

These formats were replaced through the AutomationML AR APC format. These properties are therefore not required here anymore.