

SIEMENS

Ingenuity for life



PIXIT- Generation for SIPROTEC 5

SIPROTEC 5 Application

PIXIT- Generation for SIPROTEC 5

SIPROTEC 5 Application

PIXIT- Generation for SIPROTEC 5

APN-020, Edition 2

Content

1	PIXIT- Generation for SIPROTEC 5.....	3
1.1	Introduction.....	3
1.2	PIXIT - Document.....	3
1.3	Download PICS – description from the Internet	3
1.4	Create MICS – file from DIGSI 5	5
1.5	Summary	8

1 PIXIT- Generation for SIPROTEC 5

1.1 Introduction

MICS / PICS description of a SIPROTEC 5 device result in the PIXIT document. This application describes how to download the PICS - documentation from the Internet Download Pool and how to create the MICS – description for a specific device with DIGSI 5. The PIXIT - document was used from Siemens through the Edition 1 and Edition 2 certification process of SIPROTEC 5 devices and was accepted well by the test institute KEMA. It replaces the written SIPROTEC 4 PIXIT documents.

1.2 PIXIT - Document

PIXIT – files are required for the IEC 61850 description of a device or a device family. PIXIT includes

- PICS (protocol conformance statement) which gives an overview of all supported communication features of a device regarding the implemented IEC 61850 communication services defined in chapter 8-1 of the standard.
- MICS (model implementation conformance statement) which show the IEC 61850 data modeling of a device (e.g. Logical devices, Logical nodes) with its data objects and data attributes defined in chapter 7-1 to 7-4 of the standard.

PIXIT files are required for the certification process of a device according IEC 61850 part 10 which check the PIXIT content (IEC 61850 device description) against that what is published from the device Online to a test client (e.g. KEMA test tool). PIXIT are required from experts which want to have a deeper view into the IEC 61850 structure of a device.

For SIPROTEC 4 devices for each device a written PIXIT – documentation exist. If functions are added this description must be manually adopted by the documentation department.

For SIPROTEC 5 another errorless procedure has been defined. The PICS is a written document which can be downloaded from the Internet (see chapter 1.3). MICS is created by DIGSI 5 from the real IEC 61850 data model of a device actually defined for this device with DIGSI 5. Due to that we can add or remove functions (Logical Devices and Logical Nodes) with DIGSI 5 and add new data objects, the MICS always show the real situation of a device regarding its actual IEC 61850 data replica.

1.3 Download PICS – description from the Internet

The IEC 61850 protocol features of the whole SIPROTEC 5 device family are described in a PICS – document which is provided for download in the SIPROTEC 5 Download area. If protocol features are added or changed, this document will be altered. This document is valid for Edition 1 and Edition 2 of IEC 61850.

For download the document open the URL www.siemens.com/siprotec5. Select the download area either from the SIPROTEC 5 product range on the left side or directly on the right side.

SIPROTEC 5 Application

PIXIT- Generation for SIPROTEC 5

Smart Grid | German | Contact | Site Explorer | Search

> Home > Products, Systems & Solutions > Protection > SIPROTEC 5

SIPROTEC 5

SIPROTEC 5 offers a wide product range with modular elements for every application and requirement.

Select Product from SIPROTEC 5 Product Range:

DIGSI 5
Engineering Software - Efficient operation. DIGSI 5 enhanced design means even more simplified, optimized...
> more

SIPROTEC 6MD85
Bay controller for control, automation, optional protection functions, expandable HW
> more

SIPROTEC 6MD86
Bay controller for control, automation, optional protection functions, AR (79) and BF (50BF), expandable ...
> more

SIPROTEC 7KE85
Powerful fault recorder with integrated synchrophasors (PMU) and power quality function, expandable HW
> more

Text Size

Share this Page: [Email] [Twitter] [Facebook] [LinkedIn] [Print]

Downloads

- Advertising and Presentations
- Application Sheets
- Brochures
- Catalogs
- Certificates
- Manuals
- Sales and Engineering Infos

About Siemens Smart Grid

Download Brochure

Support for Energy Automation Products

overview

Figure 1: Main page of SIPROTEC 5 on the Internet (www.siemens.com/siprotec5)

The document is available within the category "manuals".

Downloads

- Advertising and Presentations
- Application Sheets
- Brochures
- Catalogs
- Certificates
- Manuals

Type & Size	Language	Title ▲
↓ 84 MB	en	Device Manual - Distance Protection, Line Differential Protection, and Breaker Management for 1-Pole and 3-Pole Tripping
↓ 84 MB	en	Device Manual - Distance Protection, Line Differential Protection, and Overcurrent Protection for 3-Pole Tripping
↓ 3,9 MB	en	Manual - IEC 61850
↓ 1,7 MB	en	Manual - Modbus
↓ 18 MB	en	Manual - Operating Manual
↓ 510 KB	en	Manual - PIXIT, PICS, TICS

Figure 2: List of manuals from the main page of SIPROTEC 5 on the Internet (www.siemens.com/siprotec5)

> Home > Products, Systems & Solutions > Protection > Bay Controller > SIPROTEC 6MD86

SIPROTEC 6MD86

Bay Controller

Description Functions Applications Downloads Configurator

Downloads

- [-] Brochures
- [-] Catalogs
- [-] Certificates
- [-] Device Drivers
- [-] Manuals

Type & Size	Language	Title ▲	Status
↓ 41 MB	de	Gerätehandbuch - Hochspannungs-Feldleitgerät 6MD8	12/2/2014
↓ 17 MB	de	Handbuch - Betrieb	12/5/2014
↓ 14 MB	de	Handbuch - Hardware	12/5/2014
↓ 2,0 MB	de	Handbuch - IEC 60870-5-103	12/5/2014
↓ 2,1 MB	de	Handbuch - IEC 60870-5-104	12/5/2014
↓ 3,8 MB	de	Handbuch - IEC 61850	12/5/2014
↓ 1,7 MB	de	Handbuch - Modbus	12/5/2014
↓ 14 MB	en	Manual - Hardware	12/5/2014
↓ 39 MB	en	Manual - High-Voltage Bay Controller 6MD8	12/2/2014
↓ 2,0 MB	en	Manual - IEC 60870-5-103	12/5/2014
↓ 2,1 MB	en	Manual - IEC 60870-5-104	12/5/2014
↓ 3,9 MB	en	Manual - IEC 61850	12/5/2014
↓ 1,7 MB	en	Manual - Modbus	12/5/2014
↓ 16 MB	en	Manual - Operating Manual	12/5/2014
↓ 510 KB	en	Manual - PIXIT, PICS, TICS	12/5/2014

Figure 3: Download area e.g. within the bay controller SIPROTEC 6MD86

Download this 'Manual PIXIT, PICS, TICS' in the actual version from the Download area. It's a PDF – file. TICS (Technical issue conformance statement) are the technical issues discussed and solved in the standardization committee and realized from Siemens before a new version of the standard have been published. They are also included in the document and required for a certification process to describe the actual implementation state of a device regarding that IEC 61850 tissues.

1.4 Create MICS – file from DIGSI 5

The next step is to export the MICS files from DIGSI 5. As stated in chapter 1.2 (General) this IEC 61850 modeling is valid for this specific device which you have assigned in DIGSI 5. If you choose an unchanged template e.g. for a 1,5 breaker line protection, the MICS file is valid for this template with all preconfigured functions provided by Siemens. If you add functions and data objects with DIGSI 5, this values will be part of the MICS description straight away.

SIPROTEC 5 Application

PIXIT- Generation for SIPROTEC 5

The MICS – file export is only available if an Ethernet interface as Port J (Integrated Ethernet interface) or an Ethernet module is configured with the IEC 61850 protocol. Click with right mouse on a device from the project and the property page will be opened. Go to **Export** and click this entry.

Select the data format **MICS** as shown in figure 5. Select a destination as marked in figure 5 and the formatting files. The MICS – file is an XML – file which includes the complete IEC 61850 structure of the device. Two other files will be exported which afterwards allow to format the MICS XML-file with a Browser (e.g. Internet Explorer) to visualize or print out the file without the need to use an XML-editor. It is therefore recommended to export the files into a separate folder (Here as an example c:/Temp/MICS).

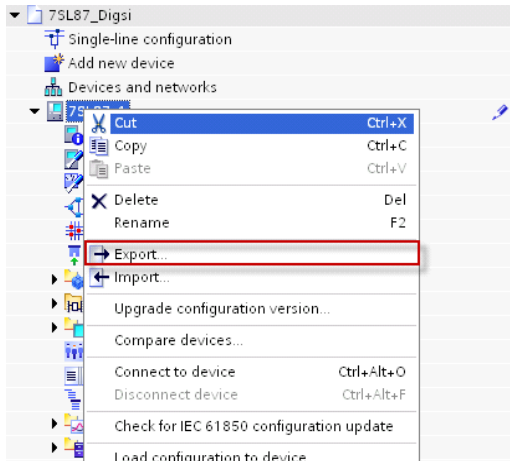


Figure 4: Export features for a selected device in DIGSI 5

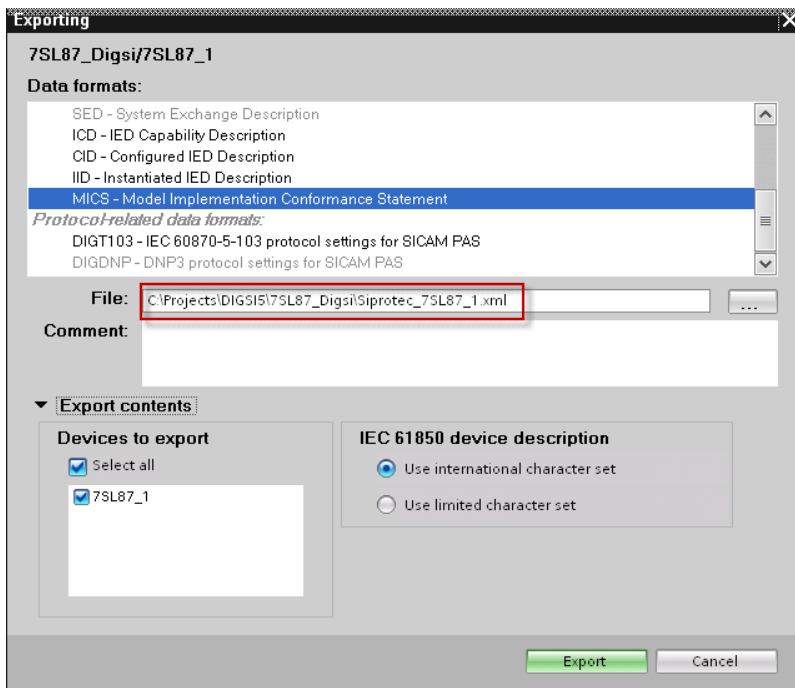


Figure 5: MICS – file export selection and folder selection for the MICS – files

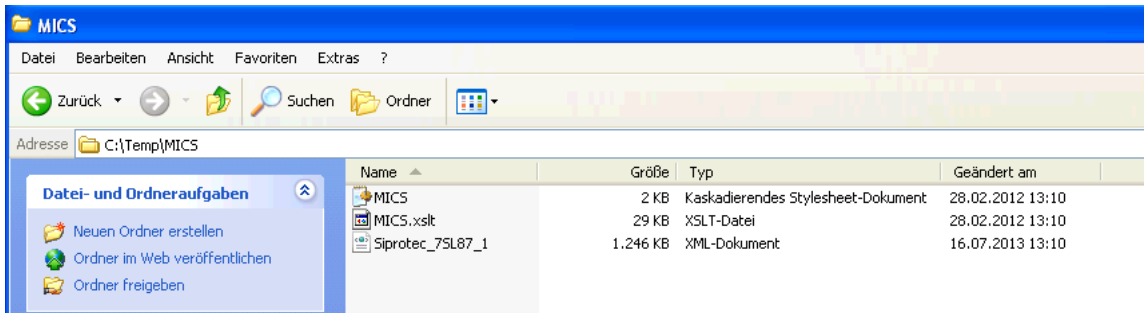


Figure 6: MICS – file (XML – format) and files for formatting the MICS in a Browser (e.g. Internet Explorer)

Open your Internet Explorer. Select a ´file open entry´ and search for the folder where you have stored the MICS file before. For data type use ´All Data´. Otherwise you will only see the HTML – files only and not the MICS XML file. Open the XML – file with the Internet Explorer (recommended).

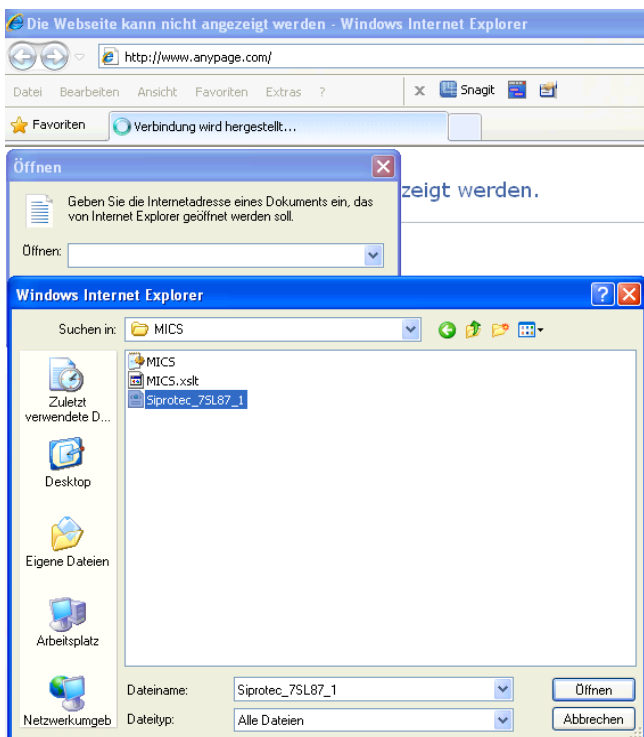


Figure 7: Selection of the MICS – file in the Internet Explorer

Afterwards the start page of the MICS – file will be displayed in the Browser (Figure 8). The following pages show all IEC 61850 Logical Devices and Logical Nodes of this device. From there you can browse into more details by Hyper Links. You can really browse through the complete IEC 61850 data structure of the device and see also all definitions of data objects in the data type template section. The configured GOOSE – connections are also shown. This HTML – pages can be printed out (e.g. as a PDF – document). Anyway, using the Browser view is much more convenient.

SIPROTEC 5 Application

PIXIT- Generation for SIPROTEC 5

SIPROTEC	
Model Implementation Conformance Statement (MICS)	
According to IEC 61850	
Device	SIP
Product code	7SL87-DAAA-AA0-0AAAA0-AZ3212-23112B-AAE000-000AA0-CB1BA2-CB1
Mapping version	V03.00.00
Application	LineProt_Device_Empty
Publication date	Tuesday, July 16, 2013, 1:10:03 PM

Figure 8: Start page of the MICS – file in the Internet Explorer

1.5 Summary

The PIXIT / PICS description from the Internet and a print out of the formatted MICS file provide the PIXIT content required for a certification process or requested by customers.

Published by
Siemens AG 2016
Energy Management Division
Digital Grid
Automation Products
Humboldtstr. 59
90459 Nuremberg, Germany

www.siemens.com/siprotec

For more information,
please contact our
Customer Support Center.

Tel.: +49 180 524 70 00

Fax: +49 180 524 24 71

(Charges depending on provider)

Email: support.energy@siemens.com

© 2016 Siemens. Subject to changes and errors.
The information given in this document only contains
general descriptions and/or performance features which
may not always specifically reflect those described, or
which may undergo modification in the course of further
development of the products. The requested performance
features are binding only when they are expressly agreed
upon in the concluded contract.

For all products using security features of OpenSSL, the
following shall apply:
This product includes software developed by the OpenSSL
Project for use in the OpenSSL Toolkit.
(<http://www.openssl.org/>)
This product includes cryptographic software written by
Eric Young (eay@cryptsoft.com)
This product includes software written by Tim Hudson
(tjh@cryptsoft.com)
This product includes software developed by Bodo Moeller.