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ROBOTICS

# Application manual

## PROFINET Anybus Device



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**Application manual**  
**PROFINET Anybus Device**

RobotWare 6.10.02

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# Overview of this manual

## About this manual

This manual describes the PROFINET Anybus Device option and contains instructions for the PROFINET Anybus Device configuration.

## Usage

This manual should be used during installation and configuration of the PROFINET Anybus Device option.

## Who should read this manual?

This manual is intended for:

- Personnel that are responsible for installations and configurations of industrial network hardware/software.
- Personnel that make the configurations of the I/O system.
- System integrators.

## Prerequisites

The reader should have the required knowledge of

- The PROFINET system.
- I/O system configuration.
- IRC5 controller.
- RobotStudio.

## References

### ABB documents

Reference	Document ID
<i>Technical reference manual - System parameters</i>	<i>3HAC050948-001</i>
<i>Product manual - IRC5</i>	<i>3HAC047136-001</i>
<i>Operating manual - IRC5 with FlexPendant</i>	<i>3HAC050941-001</i>
<i>Operating manual - RobotStudio</i>	<i>3HAC032104-001</i>
<i>Application manual - PROFINET Controller/Device</i>	<i>3HAC065546-001</i>
<i>Application manual - PROFIenergy Device</i>	<i>3HAC050967-001</i>

### Other references

Reference	Description
International standard IEC 61158 Type 3 International standard IEC 61784	The PROFINET industrial network standard is described in the international standards.
PROFINET Cabling and Interconnection Technology	Installation Guideline for PROFINET (Version 2.00, September 1998)
Commissioning PC Stations - Manual and Quick Start	Release 12/2006 C79000-G8976-C156-08
ET200S Distributed I/O System	Manual from Siemens

*Continues on next page*

## Overview of this manual

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Continued

Reference	Description
<a href="http://www.profinet.com">www.profinet.com</a>	The web site of PROFINET International
Step7 hardware configuration	Manual from Siemens

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### Revisions

Revision	Description
-	First edition. Released with RobotWare 6.0.
A	Released with RobotWare 6.01. <ul style="list-style-type: none"><li>• Minor corrections.</li><li>• System parameter <i>Connection</i> removed from <i>Industrial Network</i>.</li></ul>
B	Released with RobotWare 6.02. <ul style="list-style-type: none"><li>• Updated the path to the template files, see <a href="#">Template I/O configuration file on page 23</a>.</li></ul>
C	Released with RobotWare 6.04. Minor correction
D	Released with RobotWare 6.10.01. <ul style="list-style-type: none"><li>• Cfg name removed from entire manual.</li></ul>
E	Released with RobotWare 6.10.02. <ul style="list-style-type: none"><li>• Limitations for PROFINET input and output bytes sizes corrected in section <a href="#">Information about the Anybus device on page 23</a>.</li></ul>



# Product documentation

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## Categories for user documentation from ABB Robotics

The user documentation from ABB Robotics is divided into a number of categories. This listing is based on the type of information in the documents, regardless of whether the products are standard or optional.

All documents can be found via myABB Business Portal, [www.myportal.abb.com](http://www.myportal.abb.com).

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## Product manuals

Manipulators, controllers, DressPack/SpotPack, and most other hardware is delivered with a **Product manual** that generally contains:

- Safety information.
  - Installation and commissioning (descriptions of mechanical installation or electrical connections).
  - Maintenance (descriptions of all required preventive maintenance procedures including intervals and expected life time of parts).
  - Repair (descriptions of all recommended repair procedures including spare parts).
  - Calibration.
  - Decommissioning.
  - Reference information (safety standards, unit conversions, screw joints, lists of tools).
  - Spare parts list with corresponding figures (or references to separate spare parts lists).
  - References to circuit diagrams.
- 

## Technical reference manuals

The technical reference manuals describe reference information for robotics products, for example lubrication, the RAPID language, and system parameters.

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## Application manuals

Specific applications (for example software or hardware options) are described in **Application manuals**. An application manual can describe one or several applications.

An application manual generally contains information about:

- The purpose of the application (what it does and when it is useful).
- What is included (for example cables, I/O boards, RAPID instructions, system parameters, software).
- How to install included or required hardware.
- How to use the application.
- Examples of how to use the application.

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### Operating manuals

The operating manuals describe hands-on handling of the products. The manuals are aimed at those having first-hand operational contact with the product, that is production cell operators, programmers, and troubleshooters.

# Safety

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## Safety regulations

Before beginning mechanical and/or electrical installations, ensure you are familiar with the safety information in the product manuals for the robot.

The integrator of the robot system is responsible for the safety of the robot system.

# Network security

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### Network security

This product is designed to be connected to and to communicate information and data via a network interface. It is your sole responsibility to provide, and continuously ensure, a secure connection between the product and to your network or any other network (as the case may be).

You shall establish and maintain any appropriate measures (such as, but not limited to, the installation of firewalls, application of authentication measures, encryption of data, installation of anti-virus programs, etc) to protect the product, the network, its system and the interface against any kind of security breaches, unauthorized access, interference, intrusion, leakage and/or theft of data or information. ABB Ltd and its entities are not liable for damages and/or losses related to such security breaches, any unauthorized access, interference, intrusion, leakage and/or theft of data or information.

# Terminology

## Terms

Term	Explanation
ABCC-PRT	This is the order number of the anybus device on the network. See <a href="#">Configuring an external controller using Siemens Step7 PC tool on page 29</a> . Customers can contact the ABB Robotics sales for the internal order number if required.
Controller	The <i>PROFINET</i> master is referred to as <i>PROFINET controller</i> .
Device	In this manual the term <i>device</i> is used to describe a physical unit.
<i>External</i> device or controller	The term <i>external</i> is used to describe a controller or device on the PROFINET network connected to the IRC5 controller.
GSDML file	A GSDML file contains information about a PROFINET device. (Generic Station Description Markup Language)
Internal Anybus Device	A built-in device in the robot controller
<i>Internal</i> device	The term <i>internal</i> is used to describe when the IRC5 controller acts as a slave on the PROFINET network.
LAN	Port/connector for Local Area Network.
Master	See term <i>Controller</i>
PROFINET configuration file	XML file created using an external PROFINET configuration tool
Reduction ratio	Poll rate
Slave	See term <i>Device</i>
WAN	Port/connector for Wide Area Network.

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# 1 Introduction

## 1.1 What is PROFINET?

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### General

PROFINET is an open standard for Industrial Ethernet. PROFINET satisfies requirements for automation technology. PROFINET solutions can be implemented for factory and process automation, for safety applications, and for the entire range of drive technology right up to clock-synchronized motion control.

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### Standardization

The use of open standards, simple operation, and the integration of existing system segments have driven the definition of PROFINET from the beginning. PROFINET is standardized in IEC 61158 and IEC 61784. The continual further development of PROFINET offers users a long term perspective for the implementation of their automation tasks.

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### Communication profiles

PROFINET has a modular design and different PROFINET communication profiles are all combinations of modular elements from the groups transmission technology, communication protocol, and application profiles.

Here are some examples of PROFINET communication profiles:

- PROFINET-IO - Distributed I/O (Remote I/O). Here, the familiar I/O view of PROFIBUS is retained, in which the user data from the field devices are periodically transmitted into the process model of the control system.
- PROFIdrive - The PROFIdrive profile covers application scenarios from simple frequency converters to highly dynamic servo drivers.

# 1 Introduction

## 1.2 The PROFINET anybus device for IRC5

### 1.2 The PROFINET anybus device for IRC5

#### General

The PROFINET anybus device for IRC5 is inserted into an expansion board on top of the main computer unit in the robot controller.

The PROFINET anybus device, DSQC 688, requires the main computer DSQC1000.

#### Options

With option *PROFINET Anybus Device*, the IRC5 controller can act as a slave on the PROFINET network.



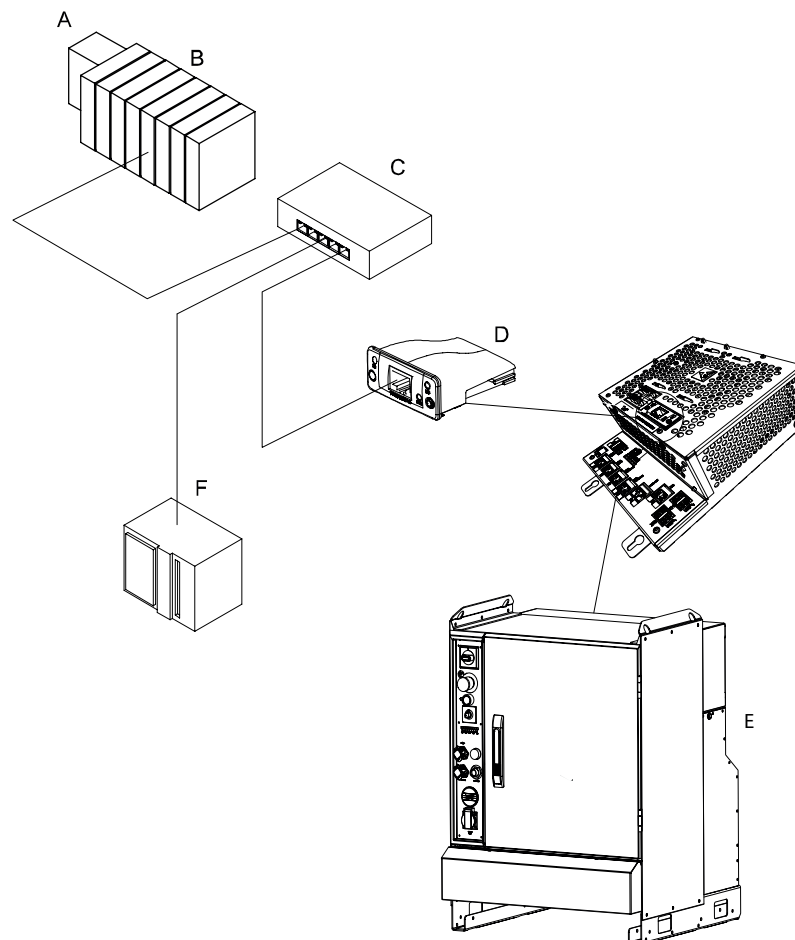
#### Note

If PROFINET master functionality is required, then the option *PROFINET Controller/Device* must be used.

For more information see *Application manual - PROFINET Controller/Device*.

#### Illustration, example

The following figure illustrates an overview of the hardware.



xx1300000755

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A	Modular PROFINET device
B	Modules for the modular station
C	Ethernet switch
D	PROFINET anybus device, DSQC 688
E	IRC5 controller
F	PLC

### Specification overview

Item	Specification
Industrial network	PROFINET
Specification revision	<i>PROFINET version 2.0</i>
Data rate	100 Mbit
Connection size	Maximum 128 input bytes and 128 output bytes.
Vendor ID	0x10C
Device ID	0x07

### Configuration program

An external PROFINET configuration tool such as *Step 7* from Siemens, together with RobotStudio, is needed for the configuration of DSQC 688. The external PROFINET configuration tool should be used according to the manual for the program.

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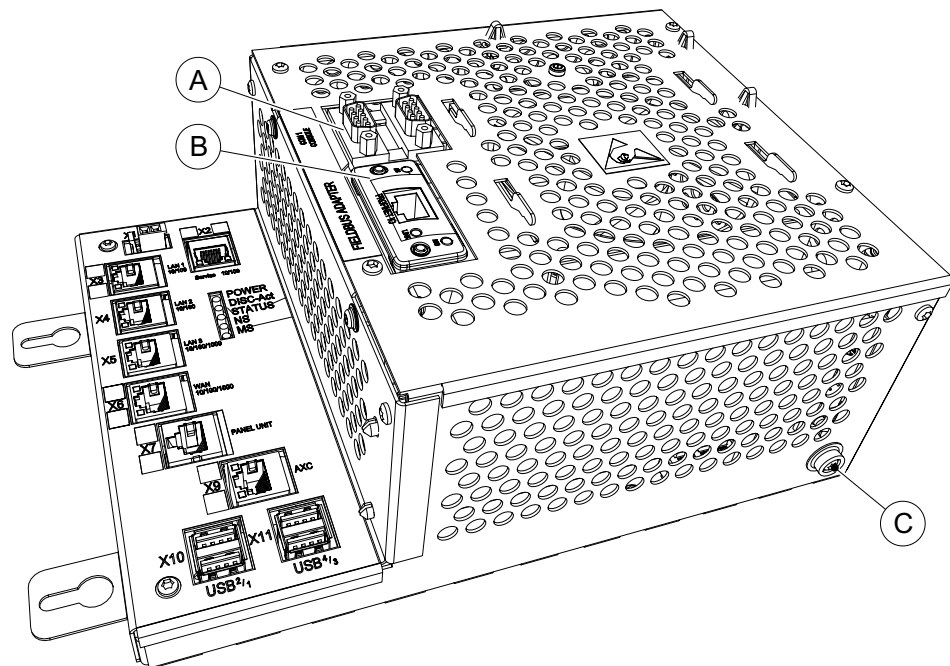
## 2 Hardware overview

### 2.1 Main computer DSQC1000

#### Connections

The I/O network is connected to the PROFINET anybus device, DSQC 688, on the main computer.

The following figure illustrates the location of the anybus device in the main computer unit.



xx1300000756

	Description	Designation	Article number
A	Anybus Device / RS232 expansion board	DSQC1003	3HAC046408-001
B	PROFINET anybus device	DSQC 688	3HAC031670-001
C	Ground connection for ESD bracelet		

#### Installation of the anybus device

For information on how to install and replace the anybus device, see *Product manual - IRC5*.

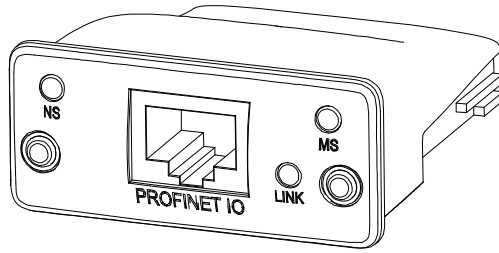
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## 2 Hardware overview

### 2.1 Main computer DSQC1000

Continued

#### Illustration, PROFINET anybus device DSQC 688



xx0800000136

NS	Network status LED
MS	Module status LED
LINK	Link/Activity
PROFINET IO	RJ-45 connector

#### LEDs

This section describes the LEDs of the PROFINET anybus device.



#### Note

A test sequence is performed on the network status LED and on the module status LED during start of the PROFINET anybus device.

#### Network status LED

LED status	Description	Comments
OFF	Offline	<ul style="list-style-type: none"><li>No power</li><li>No connection with a master</li></ul>
Green	Online (RUN)	<ul style="list-style-type: none"><li>Connection with master established</li><li>Master in RUN state</li></ul>
Green, flashing	Online (STOP)	<ul style="list-style-type: none"><li>Connection with master established</li><li>Master in STOP state</li></ul>

#### Module status LED

LED status	Description	Comment
OFF	Not initialized	Module not configured or no power.
GREEN	Normal operation	Module is initialized.
GREEN, 1 flash	Diagnostic event(s)	Diagnostic event(s) present.
GREEN, 2 flashes	Blink	Used by external configuration tools to identify the node on the network.
RED	Exception error	Module in exception state.
RED, 1 flash	Configuration error	Expected Identification differs from real identification.
RED, 2 flashes	IP address error	IP address not set.
RED, 3 flashes	Device name error	Device (Station) name not set.
RED, 4 flashes	Internal error	Module has encountered a major internal error.

Continues on next page

#### Link/Activity LED

LED status	Description
OFF	No link, no activity
GREEN	Link established
GREEN, flickering	Activity

#### Ethernet interface

The Ethernet interface operates at 100 Mbit, full duplex, as required by PROFINET specification.

#### Cables and connectors

Cables used to connect the PROFINET network must comply with Cat 5 balanced LAN requirements or better according to *ISO/IEC 11801*. For details see *PROFINET Cabling and Interconnection Technology* available from [www.profinet.com](http://www.profinet.com).

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## 3 Software overview

### 3.1 Information about the Anybus device

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#### General

To use the PROFINET anybus device, the IRC5 controller must be installed with the option *840-3 PROFINET Anybus Device*.

The PROFINET anybus device can be used to:

- connect the IRC5 controller to a PLC.
- connect the IRC5 controller to another IRC5 controller which acts as a controller.

---

#### Predefined network

When the robot system is installed with the PROFINET anybus device, a predefined *Industrial Network* with the name *PROFINET\_Anybus* is created at system startup.

---

#### Predefined Internal Anybus Device

When the robot system is installed with the PROFINET anybus device, a predefined *Internal Anybus Device* with the name *PN\_Internal\_Anybus* is created with the size of 64 input bytes and 64 output bytes.

If another input or output size is required, the predefined device *PN\_Internal\_Anybus* must be changed.

---

#### GSDML files

A GSDML file is available for the anybus device, matching the configuration of the predefined internal anybus device.

The GSDML file, *GSDML-V2.0-PNET-FA-20100510.xml*, for the anybus device can be obtained from the RobotStudio or the IRC5 controller.

- **In the RobotWare installation folder in RobotStudio:** ...*\RobotPackages\RobotWare\_RPK\_<version>\utility\service\ioconfig\PROFINET\*
- **On the IRC5 Controller:** *<SystemName>\PRODUCTS\  
<RobotWare\_xx.xx.xxxx>\utility\service\GSDML\*



#### Note

Navigate to the RobotWare installation folder from the RobotStudio **Add-Ins** tab, by right-clicking on the installed RobotWare version in the **Add-Ins** browser and selecting **Open Package Folder**.

---

#### Template I/O configuration file

A template I/O configuration file is available for the PROFINET internal anybus device, *PN\_Internal\_Anybus*. This file contains preconfigured names for all available inputs and outputs. This file can be loaded to the controller, using RobotStudio or the FlexPendant, to facilitate and speed up the configuration.

*Continues on next page*

## 3 Software overview

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### 3.1 Information about the Anybus device

*Continued*

The I/O template configuration file, *PN\_Internal\_Anybus.cfg*, can be obtained from the RobotStudio or the IRC5 controller.

- In the RobotWare installation folder in RobotStudio: ...\*RobotPackages*\*RobotWare\_RPK\_<version>*\utility\service\ioconfig\PROFINET\
- On the IRC5 Controller: <*SystemName*>\PRODUCTS\  
<*RobotWare\_xx.xx.xxxx*>\utility\service\ioconfig\PROFINET\



#### Note

Navigate to the RobotWare installation folder from the RobotStudio **Add-Ins** tab, by right-clicking on the installed RobotWare version in the **Add-Ins** browser and selecting **Open Package Folder**.

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### Communication status

To have control of the communication status, that is, to know if the controller (for example, a PLC) to device communication is working or not, the following scheme could be used.

The controller can set one signal during start-up or within the controller loop, this signal (on the internal device) could then be attached to a system input in the robot controller as a communication supervision signal. If the communication between the controller and the device is interrupted, all the inputs of the internal device will go to fail safe state (that is, be set to zero only) after the specified watchdog time. This means that the user defined communication supervision signal will also go to zero. The watchdog time is configured in the external PROFINET configuration tool.

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### Limitations

The predefined PROFINET internal anybus device, *PN\_Internal\_Anybus* has the following limitations:

- 8 digital input bytes and 8 digital output bytes but can be increased to the maximum value, which is 128 digital input bytes and 128 digital output bytes.
- If an 8 byte device is used, the input and output map starts at bit 0 and ends at bit 63.



#### Note

If the PROFINET anybus device loses connection with the master, the configured input signals are cleared (reset to zero). The output signals are kept and are possible to change.

When the connection is re-established, the controller updates the input signals.



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## 4 Configuring the anybus device

### 4.1 Recommended working procedure

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#### General

This section describes the recommended working procedure when installing and configuring the PROFINET anybus device. The working procedure helps to understand the dependencies between the different steps.

When the IRC5 controller with the PROFINET anybus device is connected to an external master, the IRC5 controller acts as an ordinary slave device on the PROFINET network.

---

#### Basic steps

Use this procedure to install and configure the PROFINET anybus device.

	Action	See
1	Create and configure the anybus device in the IRC5 controller using RobotStudio or the FlexPendant.	<a href="#">Configuring the anybus device on page 26</a>
2	Configure the external master using the vendor specific configuration tool.	<a href="#">Configuring the external controller on page 28</a>

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#### Examples

See
<a href="#">Configuring an external controller using Siemens Step7 PC tool on page 29</a>

## 4 Configuring the anybus device

### 4.2 Configuring the anybus device

### 4.2 Configuring the anybus device

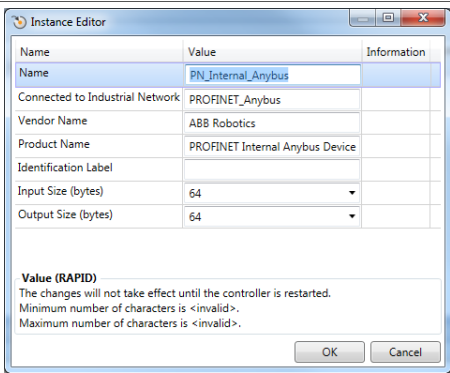
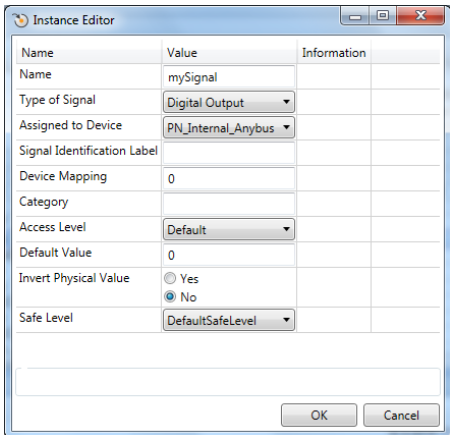
#### General

The anybus device is pre-installed at the system startup. However, the address, the input and output size of the device can be changed.

The size of the anybus device determines how many I/O signals that can be attached.

#### Anybus device configuration

Use this procedure to install and configure the PROFINET anybus device in the IRC5 controller, using RobotStudio.

	Action	Note
1	Start RobotStudio and connect to the IRC5 controller. Request write access.	
2	Open the Configuration Editor and select I/O System.	For more information about the parameters, see <a href="#">System parameters on page 33</a> .
3	In the Type list, click <b>PROFINET Internal Anybus Device</b> , right-click in the workspace and edit the I/O device, <i>PN_Internal_Anybus</i> . Edit the parameter values, if applicable.	 en1400002101
4	If the size needs to be changed: Change the default values for <i>Input Size</i> and <i>Output Size</i> to the desired size. Click OK.	This step is optional, for more information see <a href="#">Information about the Anybus device on page 23</a> .
5	In the Type list click <b>Signal</b> . Add I/O signals for the new device.	 en1400002102

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	Action	Note
6	Restart the controller. Now the IRC5 controller is ready to be contacted from a PROFINET controller.	

#### Viewing the MAC address

After the configuration, it is possible to view the MAC address of the PROFINET anybus device on FlexPendant in one of the following ways:

##### Using the Industrial Network view.

	Action	Note
1	In the ABB menu, tap <b>Inputs and Outputs</b> .	The list of most common I/O signals is displayed.
2	Tap <b>View</b> and select <b>Industrial Network</b> .	The list of available industrial networks is displayed.
3	Tap <b>PROFINET_Anybus</b> .	
4	Tap <b>I/O Device Identification</b> .	The MAC address of PROFINET anybus device is displayed along with the other details.

##### Using the I/O Devices view.

	Action	Note
1	In the ABB menu, tap <b>Inputs and Outputs</b> .	The list of most common I/O signals is displayed.
2	Tap <b>View</b> and select <b>I/O Devices</b> .	The list of available I/O devices is displayed.
3	Tap the I/O device created to PROFINET anybus device.	
4	Tap <b>Actions</b> and select <b>I/O Device Identification</b> .	The MAC address of PROFINET anybus device is displayed along with the other details.

## 4 Configuring the anybus device

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### 4.3 Configuring the external controller

### 4.3 Configuring the external controller

---

#### General

The external controller is configured using the vendor specific configuration tool that is delivered, or bought, together with the controller.

The tool is used in order to specify all the devices in the PROFINET network. One of the devices is the anybus device of the IRC5 controller. To create such a device, the GSDML file describing the internal anybus device has to be imported into the vendor specific configuration tool, see [GSDML files on page 23](#).

GSDML files must be imported for all I/O devices used in the network.

#### Example

For a specific example on how to configure a Siemens PLC, see [Configuring an external controller using Siemens Step7 PC tool on page 29](#).

#### External controller configuration

This procedure describes the general steps that needs to be performed when configuring an external controller, independent of which tool is used.

	Action
1	<p>Use the external master configuration tool to:</p> <ul style="list-style-type: none"><li>• Specify the IP address range that the external PROFINET controller operates within.</li><li>• Import the GSDML files for the internal device and all other types of I/O devices in the network.</li><li>• Add the IRC5 controller device and set the same IP address as the PROFINET industrial network</li><li>• Add any other I/O devices into the network structure.</li><li>• Set the properties of the I/O devices to reflect the I/O device's properties on the PROFINET network.</li></ul>

## 4.4 Examples

### 4.4.1 Configuring an external controller using Siemens Step7 PC tool

#### Description

This is an example of how to configure the PROFINET anybus device using the Siemens Step7 PC tool. The procedure can be used with other tools as well. See the documentation for your PLC configuration tool.


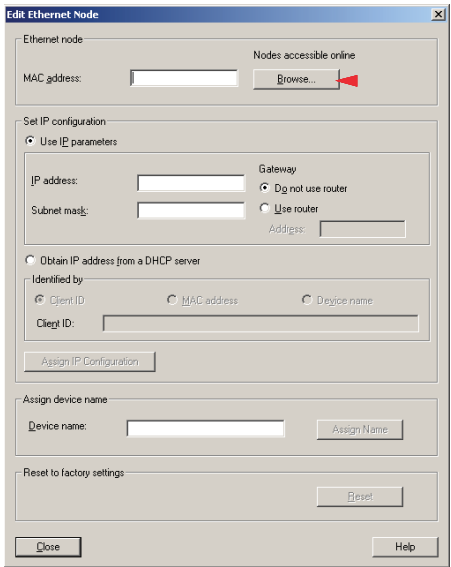

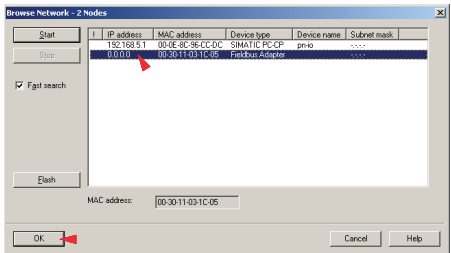
#### Configuring the anybus device

Use the procedure described in section [Configuring the anybus device on page 26](#).

#### Configuring the external master

Use this procedure to configure a Siemens PLC to connect to the anybus device, using Siemens Step 7.

The example uses a static IP address and no gateway.


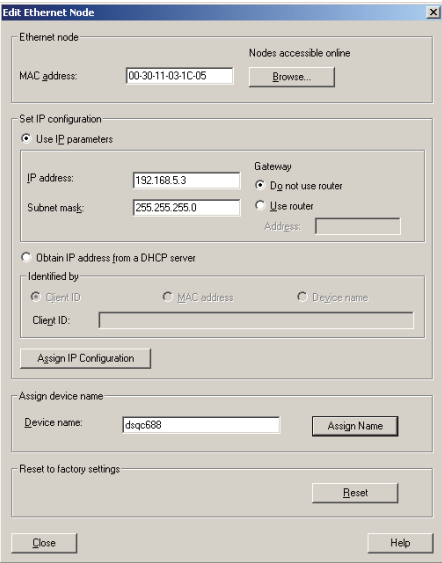
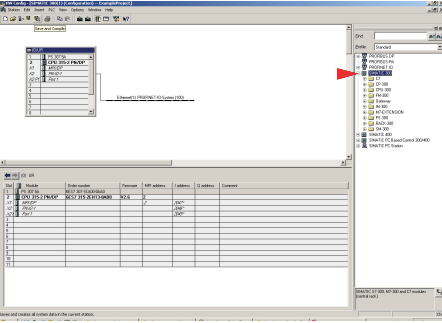
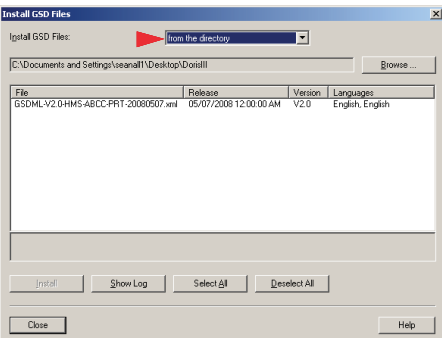
	Action	Note
1	Start Siemens Simatic Manager. On the PLC menu, click <b>Edit Ethernet Node</b> .	
2	Click <b>Browse</b> .   <b>Note</b>  The PROFINET Anybus Device must already be configured in the IRC5 controller.	 xx0800000187
3	Select the PROFINET Anybus Device to configure and click <b>OK</b> .   <b>Tip</b>  Select a device in the list and click <b>Flash</b> . The LED on the selected device will flash repeatedly until <b>Stop Flash</b> is clicked.	 xx0800000199

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## 4 Configuring the anybus device

### 4.4.1 Configuring an external controller using Siemens Step7 PC tool

Continued

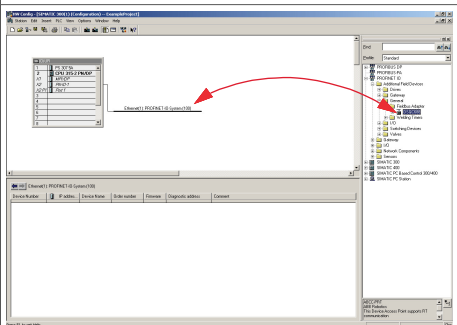
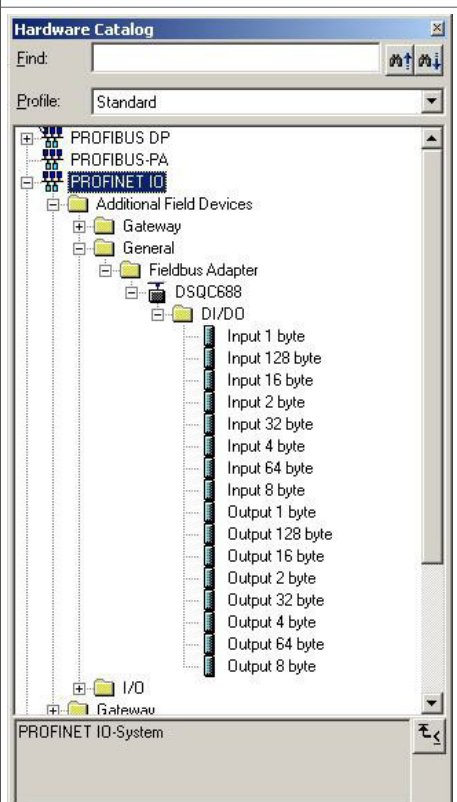
	Action	Note
4	<p>Select <b>Use IP parameters</b> and enter the IP address and subnet mask and then click <b>Assign IP configuration</b>.</p> <p>Enter device name in the <b>Device name</b> text box and click <b>Assign name</b>.</p> <p>For more information about the other settings, see Siemens documentation.</p> <p> <b>Note</b></p> <p>The IP address and device name must be unique on the industrial network.</p>	 <p>xx080000200</p>
5	Click <b>Close</b> .	
6	Open the project to which the PROFINET Fieldbus Adapter should be added.	
7	Open <b>HW Config</b> for the selected master.	 <p>xx080000188</p>
8	<p>On the <b>Option</b> menu, click <b>Install GSD File</b>.</p> <p>The GSDML file for PROFINET Anybus Device must be imported from the RobotWare distribution package.</p>	
9	In the <b>Install GSD Files</b> menu, select from the directory and click <b>Browse</b> .	 <p>xx080000190</p>

Continues on next page

## 4 Configuring the anybus device

### 4.4.1 Configuring an external controller using Siemens Step7 PC tool

*Continued*


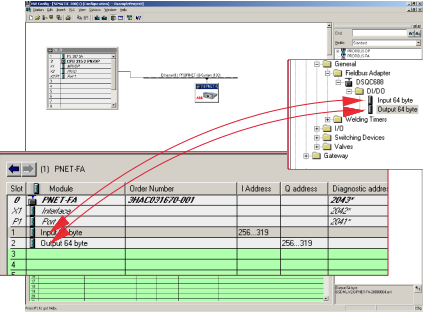
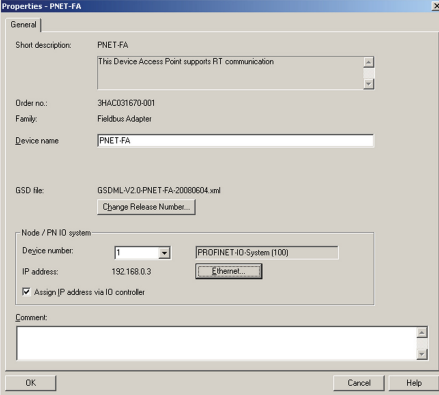
	Action	Note
10	Select the GSDML file from the RobotWare distribution package and click <b>Install</b> . Click <b>Yes</b> to confirm the warning.	
11	Click <b>OK</b> to complete the installation.	
12	Click <b>Close</b> .	
13	In the device list on the right-hand side of the HW Config, expand <b>PROFINET IO\Additional Field Devices\General\Fieldbus Adapter</b> and select <b>DSQC 688</b> .	
14	Drag the DSQC 688 device to the industrial network.	 <p>xx0800000193</p>
15	Expand the <b>DI/DO</b> folder for the DSQC 688 device in the tree structure.	 <p>xx0800000195</p>
16	Select the DSQC 688 icon added to the fieldbus network.	

*Continues on next page*

## 4 Configuring the anybus device

### 4.4.1 Configuring an external controller using Siemens Step7 PC tool

Continued

	Action	Note
17	<p>Drag the correct input size to slot 1 and the correct output size to slot 2.</p> <p>The input size shall be the same as the output size configured in the IRC5 controller. The output size shall be the same as the input size configured in the IRC5 controller.</p> <p> <b>Note</b></p> <p>Inputs and outputs must be added to the correct slots, otherwise the communication with the device will not work properly.</p> <p>If another size, then 64 byte input and 64 byte output are used, the size must be changed in the UNIT TYPE in the IRC5 controller configuration.</p>	 <p>xx080000196</p>
18	<p>Right-click on the DSQC 688 icon and select <b>Object Properties</b>.</p>	
19	<p>Enter the same device name and IP address as when naming the device in step 4.</p> <p>Click <b>Ethernet</b> to enter the IP address and make sure that <b>Assign IP address via IO controller</b> is selected.</p>	 <p>xx080000197</p>
20	<p>Click <b>OK</b>.</p>	
21	<p>On the <b>Station</b> menu, click <b>Save and Compile</b>.</p>	
22	<p>On the <b>PLC</b> menu, click <b>Download</b>.</p>	



# 5 System parameters

## 5.1 Introduction

---

### About the system parameters

There are both PROFINET specific parameters and more general parameters. This chapter describes all PROFINET specific system parameters. The parameters are divided into the type they belong to.

For information about other system parameters, see *Technical reference manual - System parameters*.

*Continues on next page*

## 5 System parameters

---

### 5.1.1 PROFINET system parameters

#### 5.1.1 PROFINET system parameters

---

##### Industrial Network

These parameters belong to the type *Industrial Network* in the topic *I/O System*.

Parameter	For more information, see
Name	<i>Technical reference manual - System parameters</i>
Identification Label	<i>Technical reference manual - System parameters</i>
Address	<i>Technical reference manual - System parameters</i>
Subnet Mask	<a href="#">Subnet Mask on page 36</a>
Gateway	<a href="#">Gateway on page 37</a>
PROFINET Station Name	<a href="#">PROFINET Station Name on page 38</a>

---

##### Internal Anybus Device

These parameters belong to the type *Internal Anybus Device* in the topic *I/O System*.

Parameter	For more information, see
Name	<i>Technical reference manual - System parameters</i>
Connected to Industrial Network	<i>Technical reference manual - System parameters</i>
Simulated	<i>Technical reference manual - System parameters</i>
Vendor Name	<i>Technical reference manual - System parameters</i>
Product Name	<i>Technical reference manual - System parameters</i>
Identification Label	<i>Technical reference manual - System parameters</i>
Input Size	<a href="#">Input Size on page 39</a>
Output Size	<a href="#">Output Size on page 40</a>

## 5.2 Industrial Network

### 5.2.1 Address

---

**Parent**

*Address* belongs to the type *Industrial Network*, in the topic *I/O System*.

---

**Description**

The parameter *Address* specifies the IP address of the PROFINET anybus adapter on the network. This IP address is used by an external controller to set up a connection to the anybus adapter.

---

**Usage**

The address decides what address the master and any internal slave device should use to communicate with other devices on the industrial network.

---

**Usage**

The parameter *Address* is used to set the IP address of the IRC5 controller on the used network interface.

---

**Allowed values**

0.0.0.0 - 255.255.255.255

## 5 System parameters

---

### 5.2.2 Subnet Mask

### 5.2.2 Subnet Mask

---

**Parent**

*Subnet Mask* belongs to the type *Industrial Network*, in the topic *I/O System*.

---

**Description**

The parameter *Subnet Mask* is used to determine what subnet the IP address belongs to.

---

**Usage**

The parameter *Subnet Mask* is used to divide the network into logical subnets.

---

**Prerequisites**

The option *PROFINET Anybus Device* must be installed.

---

**Default value**

0.0.0.0

---

**Allowed values**

0.0.0.0 - 255.255.255.255

---

### 5.2.3 Gateway

---

**Parent**

*Gateway* belongs to the type *Industrial Network*, in the topic *I/O System*.

---

**Description**

The parameter *Gateway* specifies the node on the network that serves as an entrance to another network.

---

**Usage**

This parameter is used to route messages to other logical networks. This functionality is currently not supported.

---

**Prerequisites**

The option *PROFINET Anybus Device* must be installed.

---

**Default value**

0.0.0.0

---

**Allowed values**

0.0.0.0 - 255.255.255.255

---

## 5 System parameters

---

### 5.2.4 PROFINET Station Name

#### 5.2.4 PROFINET Station Name

---

##### Parent

*PROFINET Station Name* belongs to the type *Industrial Network*, in the topic *I/O System*.

---

##### Description

*PROFINET Station Name* specifies the PROFINET station name on the network of the IRC5 controller.

---

##### Usage

The parameter *PROFINET Station Name* is used to identify a PROFINET device on the network. The name must be unique on the network.

The parameter *PROFINET Station Name* can also be changed with an external PROFINET configuration tool or a connecting PROFINET master.

---

##### Prerequisites

The option *PROFINET Anybus Device* must be installed.

---

##### Default value

The default value is an empty string.

---

##### Allowed values

A string with maximum 80 characters.

Allowed characters:

- 0-9 (numerical)
- A-Z (uppercase letters)
- a-z (lowercase letters)
- - (hyphen)
- . (full stop)

## 5.3 Internal Anybus Device

### 5.3.1 Input Size

---

**Parent**

*Input Size* belongs to the type *Internal Anybus Device*, in the topic *I/O System*.

---

**Description**

The parameter *Input Size* defines the data size in bytes for the input area received from the PROFINET Master.

---

**Usage**

*Input Size* is a PROFINET specific parameter.

---

**Prerequisites**

The option *PROFINET Anybus Device* must be installed.

---

**Limitations**

A limitation is the maximum device size for the *Internal Anybus Device*

---

**Allowed values**

Allowed values are the integers 1-128 bytes (8-1024 signal bits).  
The default value is 64 bytes (512 signal bits).

---

**Additional information**

Any other values than 1, 2, 4, 8, 16, 32, 64, or 128 will result in digital input size rounded up to the closest of these values.

## 5 System parameters

---

### 5.3.2 Output Size

### 5.3.2 Output Size

---

**Parent**

*Output Size* belongs to the type *Internal Anybus Device*, in the topic *I/O System*.

---

**Description**

The parameter *Output Size* defines the data size in bytes for the input area sent to the PROFINET Master.

---

**Usage**

*Output Size* is a PROFINET specific parameter.

---

**Prerequisites**

The option *PROFINET Anybus Device* must be installed.

---

**Limitations**

A limitation is the maximum device size for the *Internal Anybus Device*

---

**Allowed values**

Allowed values are the integers 1-128 (8-1024 signal bits).  
The default value is 64 (512 signal bits).

---

**Additional information**

Any other values than 1, 2, 4, 8, 16, 32, 64, or 128 will result in digital output size rounded up to the closest of these values.



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