ConfigurationDesk for RapidPro

Hardware Properties

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dSPACE

How to Contact dSPACE

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How to Contact dSPACE Support

If you encounter a problem when using dSPACE products, contact your local dSPACE representative:

- Local dSPACE companies and distributors: http://www.dspace.com/go/locations
- For countries not listed, contact dSPACE GmbH in Paderborn, Germany.
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You can also use the support request form: http://www.dspace.com/go/supportrequest. If you are logged on to mydSPACE, you are automatically identified and do not need to add your contact details manually.

If possible, always provide the relevant dSPACE License ID or the serial number of the CmContainer in your support request.

Software Updates and Patches

dSPACE strongly recommends that you download and install the most recent patches for your current dSPACE installation. Visit http://www.dspace.com/go/patches for software updates and patches.

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About This Reference

Contents

ConfigurationDesk for RapidPro is a graphical user interface that allows you to configure the RapidPro hardware intuitively and effectively. This reference provides information on dialogs and windows of ConfigurationDesk for RapidPro regarding the RapidPro hardware.

Required knowledge

Knowledge in handling the host PC and the Microsoft Windows operating system is presupposed.

Symbols

dSPACE user documentation uses the following symbols:

Symbol	Description
DANGER	Indicates a hazardous situation that, if not avoided, will result in death or serious injury.
WARNING	Indicates a hazardous situation that, if not avoided, could result in death or serious injury.
CAUTION	Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.
NOTICE	Indicates a hazard that, if not avoided, could result in property damage.
Note	Indicates important information that you should take into account to avoid malfunctions.
Tip	Indicates tips that can make your work easier.
	Indicates a link that refers to a definition in the glossary, which you can find at the end of the document unless stated otherwise.
	Precedes the document title in a link that refers to another document.

Naming conventions

dSPACE user documentation uses the following naming conventions:

%name% Names enclosed in percent signs refer to environment variables for file and path names.

< > Angle brackets contain wildcard characters or placeholders for variable file and path names, etc.

Special folders

Some software products use the following special folders:

Common Program Data folder A standard folder for application-specific configuration data that is used by all users.

```
%PROGRAMDATA%\dSPACE\<InstallationGUID>\<ProductName>
```

or

```
%PROGRAMDATA%\dSPACE\<ProductName>\<VersionNumber>
```

Documents folder A standard folder for user-specific documents.

```
%USERPROFILE%\Documents\dSPACE\<ProductName>\
<VersionNumber>
```

Local Program Data folder A standard folder for application-specific configuration data that is used by the current, non-roaming user.

```
%USERPROFILE%\AppData\Local\dSPACE\<InstallationGUID>\
<ProductName>
```

Accessing dSPACE Help and PDF Files

After you install and decrypt dSPACE software, the documentation for the installed products is available in dSPACE Help and as PDF files.

dSPACE Help (local) You can open your local installation of dSPACE Help:

- On its home page via Windows Start Menu
- On specific content using context-sensitive help via **F1**

dSPACE Help (Web) You can access the Web version of dSPACE Help at www.dspace.com/go/help.

To access the Web version, you must have a *mydSPACE* account.

PDF files You can access PDF files via the icon in dSPACE Help. The PDF opens on the first page.

Safety Precautions

General Warnings on Using dSPACE Products

Using ConfigurationDesk for RapidPro

Using dSPACE software can be dangerous. You must observe the following safety instructions and the relevant instructions in the user documentation.

⚠ WARNING

Improper or negligent use can result in serious personal injury and/or property damage.

Using the ConfigurationDesk for RapidPro software can have a direct effect on dSPACE systems and technical (electrical, hydraulic, mechanical) systems connected to them.

- **Only persons who are qualified to use dSPACE software, and who have been informed of the above dangers and possible consequences, are permitted to use it.**
- All applications where malfunctions or misoperation involve the danger of injury or death must be examined for potential hazards by the user, who must if necessary take additional measures for protection (for example, an emergency off switch).

Liability

It is your responsibility to adhere to instructions and warnings. Any unskilled operation or other improper use of this product in violation of the respective safety instructions, warnings, or other instructions contained in the user documentation constitutes contributory negligence, which may lead to a limitation of liability by dSPACE GmbH, its representatives, agents and regional dSPACE companies, to the point of total exclusion, as the case may be. Any exclusion or limitation of liability according to other applicable regulations, individual agreements, and applicable general terms and conditions remain unaffected.

Data loss during operating system shutdown

The shutdown procedure of Microsoft Windows operating systems causes some required processes to be aborted although they are still being used by dSPACE software. To avoid data loss, the dSPACE software must be terminated manually before a PC shutdown is performed.

RapidPro Configuration Dialogs

Objective

When working with ConfigurationDesk for RapidPro, you will encounter different configuration dialogs. They display information on the selected hardware component and allow you to specify parameters.

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RapidPro System Properties

Objective

ConfigurationDesk for RapidPro allows you to enter a name for your RapidPro system and to view the RoutingID, and the TopologyID.

Stack Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	Platform Manager – RapidPro stack (Properties)
Shortcut key	**Enter** with a RapidPro stack selected in the Platform Manager
Toolbar icon	None
Mouse	Double-click on the RapidPro stack in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display details for the RapidPro stack.

Identification

Stack name When you work with a stack or a single Control Unit, you can give it a new name with a maximum of 64 characters. The prefix RapidPro is always added to the name you enter. The new name is saved on the Control Unit. You must not leave the entry field empty.

You can change the stack's name only via Platform Manager. For further information, refer to How to Change a Stack Name (ConfigurationDesk for RapidPro - Guide 🕮).

RoutingID Displays the ID of the currently active routing code. The routing code defines which RapidPro module can be installed on which slot of a unit.

TopolopyID Displays the TopologyID. It is a decimal number that uniquely represents the architecture of RapidPro hardware.

RapidPro SC Unit Properties

Objective

ConfigurationDesk for RapidPro displays identification and version information on your SC Unit and allows to change its name.

SC Unit Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Hardware Resource Browser – SC Unit (**Properties**) ▪ Platform Manager – SC Unit (**Properties**)
Shortcut key	**Enter** with an SC Unit selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the SC Unit in the Hardware Resource Browser ▪ Double-click on the SC Unit in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display the properties of an SC Unit.

Configuration

Lets you configure unit properties.

Unit name Displays the name of the unit. You can click the name to change it using a maximum of 64 characters. This facilitates the unit's identification in your application. You must not leave the edit field empty. The new name is saved on the unit as soon as you click **OK** or **Apply**.

You can change the unit's name only via Platform Manager. For further information, refer to How to Change a Unit Name (ConfigurationDesk for RapidPro - Guide 🕮).

Enable watchdog Lets you activate/deactivate the watchdog function by selecting/deselecting the checkbox. This parameter is available only if the unit is used as a single unit. For information on connecting the watchdog inputs and its functions, refer to Connecting the Watchdog Input (RapidPro System Hardware Installation Guide 🕮).

System monitoring

Lets you show information on the unit.

Watchdog state Indicates whether the watchdog is triggered or not:

Parameter	Description
Triggered	A square-wave signal, 0 … +5 V, 10 Hz … 100 kHz is connected to the watchdog input, all module outputs of the unit are enabled.
Non-triggered	All module outputs of the unit are disabled, there is no signal on the watchdog input.

This parameter is available only if the unit is used as a single unit. For information on connecting the watchdog inputs and its functions, refer to Connecting the Watchdog Input (RapidPro System Hardware Installation Guide 🕮).

Internal supply voltage (xxx V) Display internal supply voltages used on the carrier board. The supply voltages are displayed with a typical scan rate of approx. 500 ms. The monitored voltages are for troubleshooting purposes only.

Temperature sensors T1 … Tx Display temperatures measured on the units circuit board. The monitored temperatures are for troubleshooting purposes only.

Identification

Displays hardware details for unit identification.

Parameter	Description
dSPACE number	Number of the unit type. The dSPACE number is also printed on the circuit board.
Layer number	Indicates the position of the unit, as follows: ▪ In a stack with unit connection bus (UCB), the layer number is counted up from the bottom unit (layer number 1) to the top unit. ▪ In a single unit (or a stack without UCB), the layer number is always "1".
Serial number	Unique identification number of the carrier board. The serial number is also printed on an adhesive label on the circuit board.
SC module slots	Number of slots on the carrier board which can be used to install signal conditioning modules (SC modules, for example, SC-AI 4/1).
PS module slots	Number of slots on the carrier board which can be used to install power stage modules (PS modules, for example, PS-FBD 2/1).

Parameter	Description
COM module slots	Number of slots on the carrier board which can be used to install communication modules (COM modules, for example, COM-USB-CI 1/1).
MC module slots	Number of slots on the carrier board which can be used to install microcontroller modules (for example, MC-MPC565 1/1).

Versions

Displays version information of hardware and software components.

Parameter		Description
Plug-in version		Indicates the plug-in software version.
Unit hardware version		Indicates the revision number of the unit. The syntax of the revision number as displayed in ConfigurationDesk for RapidPro is "<major revision>.<minor revision>". For example, "4.2" denotes major revision 4, minor revision 2. The major revision number is also printed on the carrier board. It is added to the dSPACE number. Example: DS1621-04, where "04" indicates the major revision.
PIC	PIC hardware version	Every unit provides a microcontroller (PIC) on its carrier board for communication. The PIC enables the communication to the host (for example, MicroAutoBox). The syntax of the revision numbers as displayed in ConfigurationDesk for RapidPro is assigned by the manufacturer of the PIC.
	PIC boot firmware version	The PIC boot firmware makes it possible to update the PIC firmware.
	PIC firmware version	The PIC firmware provides the basic functionality of the PIC: ▪ Installed in a RapidPro unit that is used as a single unit, the PIC enables communication to the host for example, MicroAutoBox). ▪ Installed in a RapidPro unit in a stack with UCB, the PIC is the connection to the microcontroller module (for example, MC-MPC565 1/1).

RapidPro Power Unit Properties

Objective

ConfigurationDesk for RapidPro displays identification and version information on your Power Unit and allows to change its name.

Power Unit Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Hardware Resource Browser – Power Unit (**Properties**) ▪ Platform Manager – Power Unit (**Properties**)
Shortcut key	**Enter** with a Power Unit selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the Power Unit in the Hardware Resource Browser ▪ Double-click on the Power Unit in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display the properties of a Power Unit.

Configuration

Lets you configure unit properties.

Unit name Displays the name of the unit. You can click the name to change it using a maximum of 64 characters. This facilitates the unit's identification in your application. You must not leave the edit field empty. The new name is saved on the unit as soon as you click **OK** or **Apply**.

You can change the unit's name only via Platform Manager. For further information, refer to How to Change a Unit Name (ConfigurationDesk for RapidPro - Guide 🕮).

Enable watchdog Lets you activate/deactivate the watchdog function by selecting/deselecting the checkbox. This parameter is available only if the unit is used as a single unit. For information on connecting the watchdog inputs and its functions, refer to Connecting the Watchdog Input (RapidPro System Hardware Installation Guide 🕮).

System monitoring

Lets you show information on the unit.

Watchdog state Indicates whether the watchdog is triggered or not:

Parameter	Description
Triggered	A square-wave signal, 0 … +5 V, 10 Hz … 100 kHz is connected to the watchdog input, all module outputs of the unit are enabled.
Non-triggered	All module outputs of the unit are disabled, there is no signal on the watchdog input.

This parameter is available only if the unit is used as a single unit. For information on connecting the watchdog inputs and its functions, refer to Connecting the Watchdog Input (RapidPro System Hardware Installation Guide 🕮).

Internal supply voltage (xxx V) Display internal supply voltages used on the carrier board. The supply voltages are displayed with a typical scan rate of approx. 500 ms. The monitored voltages are for troubleshooting purposes only.

External supply voltage UBAT Rail # 1/2 Display the supply voltages which are connected to front I/O connector F1 (rail1) and front I/O connector F2 (rail2). The supply voltages are displayed with a typical scan rate of approx. 500 ms. The monitored voltages are for troubleshooting purposes only.

Temperature sensors T1 … Tx Display temperatures measured on the units circuit board. The monitored temperatures are for troubleshooting purposes only.

Identification

Displays hardware details for unit identification.

Parameter	Description
dSPACE number	Number of the unit type. The dSPACE number is also printed on the circuit board.
Layer number	Indicates the position of the unit, as follows: ▪ In a stack with unit connection bus (UCB), the layer number is counted up from the bottom unit (layer number 1) to the top unit. ▪ In a single unit (or a stack without UCB), the layer number is always "1".
Serial number	Unique identification number of the carrier board. The serial number is also printed on an adhesive label on the circuit board.

Parameter	Description
SC module slots	Number of slots on the carrier board which can be used to install signal conditioning modules (SC modules, for example, SC-AI 4/1).
PS module slots	Number of slots on the carrier board which can be used to install power stage modules (PS modules, for example, PS-FBD 2/1).
COM module slots	Number of slots on the carrier board which can be used to install communication modules (COM modules, for example, COM-USB-CI 1/1).
MC module slots	Number of slots on the carrier board which can be used to install microcontroller modules (for example, MC-MPC565 1/1).

Versions

Displays version information of hardware and software components.

Parameter		Description
Plug-in version		Indicates the plug-in software version.
Unit hardware version		Indicates the revision number of the unit. The syntax of the revision number as displayed in ConfigurationDesk for RapidPro is "<major revision>.<minor revision>". For example, "4.2" denotes major revision 4, minor revision 2. The major revision number is also printed on the carrier board. It is added to the dSPACE number. Example: DS1621-04, where "04" indicates the major revision.
PIC	PIC hardware version	Every unit provides a microcontroller (PIC) on its carrier board for communication. The PIC enables the communication to the host (for example, MicroAutoBox). The syntax of the revision numbers as displayed in ConfigurationDesk for RapidPro is assigned by the manufacturer of the PIC.
	PIC boot firmware version	The PIC boot firmware makes it possible to update the PIC firmware.
	PIC firmware version	The PIC firmware provides the basic functionality of the PIC: ▪ Installed in a RapidPro unit that is used as a single unit, the PIC enables communication to the host for example, MicroAutoBox). ▪ Installed in a RapidPro unit in a stack with UCB, the PIC is the connection to the microcontroller module (for example, MC-MPC565 1/1).

RapidPro Control Unit Properties

Objective

ConfigurationDesk for RapidPro displays identification and version information on your Control Unit and allows to change its name.

Control Unit Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Hardware Resource Browser – Control Unit (**Properties**) ▪ Platform Manager – Control Unit (**Properties**)
Shortcut key	**Enter** with a Control Unit selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the Control Unit in the Hardware Resource Browser ▪ Double-click on the Control Unit in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display the properties of a Control Unit.

Configuration

Lets you configure unit properties.

Unit name Displays the name of the unit. You can click the name to change it using a maximum of 64 characters. This facilitates the unit's identification in your application. You must not leave the edit field empty. The new name is saved on the unit as soon as you click **OK** or **Apply**.

You can change the unit's name only via Platform Manager. For further information, refer to How to Change a Unit Name (ConfigurationDesk for RapidPro - Guide 🕮).

System monitoring

Lets you show information on the unit.

Internal supply voltage (xxx V) Display internal supply voltages used on the carrier board. The supply voltages are displayed with a typical scan rate of approx. 500 ms. The monitored voltages are for troubleshooting purposes only.

Temperature sensors T1 ... Tx Display temperatures measured on the units circuit board. The monitored temperatures are for troubleshooting purposes only.

Identification

Displays hardware details for unit identification.

Parameter	Description
dSPACE number	Number of the unit type. The dSPACE number is also printed on the circuit board.
Layer number	Indicates the position of the unit, as follows: ▪ In a stack with unit connection bus (UCB), the layer number is counted up from the bottom unit (layer number 1) to the top unit. ▪ In a single unit (or a stack without UCB), the layer number is always "1".
Serial number	Unique identification number of the carrier board. The serial number is also printed on an adhesive label on the circuit board.
SC module slots	Number of slots on the carrier board which can be used to install signal conditioning modules (SC modules, for example, SC-AI 4/1).
PS module slots	Number of slots on the carrier board which can be used to install power stage modules (PS modules, for example, PS-FBD 2/1).
COM module slots	Number of slots on the carrier board which can be used to install communication modules (COM modules, for example, COM-USB-CI 1/1).
MC module slots	Number of slots on the carrier board which can be used to install microcontroller modules (for example, MC-MPC565 1/1).

Versions

Displays version information of hardware and software components.

Parameter	Description
Plug-in version	Indicates the plug-in software version.
Unit hardware version	Indicates the revision number of the unit. The syntax of the revision number as displayed in ConfigurationDesk for RapidPro is "<major revision>.<minor revision>". For example, "4.2" denotes major revision 4, minor revision 2. The major revision number is also printed on the carrier board. It is added to the dSPACE number. Example: DS1621-04, where "04" indicates the major revision.

Parameter		Description
PIC	PIC hardware version	Every unit provides a microcontroller (PIC) on its carrier board for communication. The PIC enables the communication to the host (for example, MicroAutoBox). The syntax of the revision numbers as displayed in ConfigurationDesk for RapidPro is assigned by the manufacturer of the PIC.
	PIC boot firmware version	The PIC boot firmware makes it possible to update the PIC firmware.
	PIC firmware version	The PIC firmware provides the basic functionality of the PIC: ▪ Installed in a RapidPro unit that is used as a single unit, the PIC enables communication to the host for example, MicroAutoBox). ▪ Installed in a RapidPro unit in a stack with UCB, the PIC is the connection to the microcontroller module (for example, MC-MPC565 1/1).
PLD	I/O PLD firmware version	The programmable logic device (PLD) is used to support the I/O functionality of the microcontroller module (MC module) on the unit's carrier board. The indicated I/O PLD versions are correlated with the hardware version of the unit's carrier board and the range of the I/O functionality.
	I/O PLD hardware version	

RapidPro MC-MPC Module Properties

Objective

ConfigurationDesk for RapidPro displays information on your MC-MPC microcontroller module.

Module Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	Platform Manager – MPC Module (**Properties**)
Shortcut key	**Enter** with a MPC Module selected in the Platform Manager
Toolbar icon	None
Mouse	Double-click on the MPC Module in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display the properties of a MC-MPC microcontroller module.

Identification

Displays hardware details for module identification.

Parameter	Description
Module category	"MC" – microcontroller (for example, MC-MPC565 1/1)
Module type	dSPACE module type designation
Module variant	Variant identification of the module
dSPACE number	Number of the module type. The dSPACE number is also printed on the circuit board.

Parameter	Description
Serial number	Unique identification number of the module. The serial number is also printed on an adhesive label on a module connector.
Microcontroller type	Indicates the microcontroller type (for example, MPC565) on which the microcontroller module is based.
Microcontroller clock rate	Indicates the microcontroller's clock rate in MHz.
External RAM	Indicates the size of the external RAM which the microcontroller module provides.
External flash memory	Indicates the size of the external flash memory which the microcontroller module provides.

Versions

Displays version information of hardware and software components.

Parameter		Description
Plug-in version		Indicates the plug-in software version.
Microcontroller hardware version		Indicates the microcontroller hardware revision. The syntax of the revision numbers as displayed in ConfigurationDesk is assigned by the manufacturer of the microcontroller.
Microcontroller boot firmware version		The microcontroller boot firmware makes it possible to update the microcontroller module firmware.
PIC firmware version		The PIC firmware provides the basic functionality for communication between the module and the unit.
Microcontroller slave I/O firmware version		*Only displayed for MC-MPC565 1/1:* Version of the firmware which is installed on the microcontroller module of a RapidPro system used as intelligent I/O subsystem.
PLD	MC I/O PLD firmware version	Indicates the version number of the firmware used on the RapidPro control unit's I/O PLD (programmable logic device). The I/O PLD supports I/O functionality of the microcontroller module (MC module).
	MC I/O PLD hardware version	Indicates the control unit hardware version which is compatible to the MC I/O PLD firmware.
	System PLD firmware version	Indicates the version number of the firmware used on the system PLD (programmable logic device) of the microcontroller module.

RapidPro COM Module Properties

Objective

ConfigurationDesk for RapidPro displays information on your communication (COM) modules.

Module Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	Platform Manager – COM module (**Properties**)
Shortcut key	**Enter** with a COM module selected in the Platform Manager
Toolbar icon	None
Mouse	Double-click on the COM module in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display the properties of a COM module.

Identification

Displays hardware details for module identification.

Parameter	Description
Module category	"COM" – communication (for example, COM-USB-CI 1/1)
Module type	dSPACE module type designation
Module variant	Variant identification of the module
dSPACE number	Number of the module type. The dSPACE number is also printed on the circuit board.

Parameter	Description
Serial number	Unique identification number of the module. The serial number is also printed on an adhesive label on a module connector.

Versions

Displays version information of hardware and software components.

Parameter	Description
Plug-in version	Indicates the plug-in software version.
Module hardware version	Indicates the revision number of the module. The syntax of the revision number as displayed in ConfigurationDesk for RapidPro is "<major revision>.<minor revision>". For example, "4.2" denotes major revision 4, minor revision 2. The major revision number is also printed on the circuit board. It is added to the dSPACE number. Example: DS1621-04, where "04" indicates the major revision.
PIC firmware version	The PIC firmware provides the basic functionality for communication between the module and the unit.
PLD firmware version	Indicates the firmware version number of the firmware used on the module's PLD (programmable logic device).

RapidPro TRX Module Properties

Objective

ConfigurationDesk for RapidPro displays information on your bus transceiver (TRX) modules.

Module Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	Platform Manager – TRX module (**Properties**)
Shortcut key	**Enter** with a TRX module selected in the Platform Manager
Toolbar icon	None
Mouse	Double-click on the TRX module in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display the properties of a bus transceiver (TRX) module.

Identification

Displays hardware details for module identification.

Parameter	Description
Module category	"TRX" – bus transceiver (for example, TRX-CAN-HS 1/1)
Module type	dSPACE module type designation
Module variant	Variant identification of the module
dSPACE number	Number of the module type. The dSPACE number is also printed on the circuit board.

Parameter	Description
Serial number	Unique identification number of the module. The serial number is also printed on an adhesive label on a module connector.

Versions

Displays version information of hardware and software components.

Parameter		Description
Plug-in version		Indicates the plug-in software version.
Module hardware version		Indicates the revision number of the module. The syntax of the revision number as displayed in ConfigurationDesk for RapidPro is "<major revision>.<minor revision>". For example, "4.2" denotes major revision 4, minor revision 2. The major revision number is also printed on the circuit board. It is added to the dSPACE number. Example: DS1621-04, where "04" indicates the major revision.
PIC	PIC boot firmware version	The PIC boot firmware makes it possible to update the PIC firmware.
	PIC firmware version	The PIC firmware provides the basic functionality for communication between the module and the unit.

RapidPro Connector Module Properties

Objective

ConfigurationDesk for RapidPro displays information on the front connector modules (FCON) and rear connector modules (RCON) of your RapidPro system.

Module Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	Platform Manager – connector (FCON, RCON) module (**Properties**)
Shortcut key	**Enter** with connector (FCON, RCON) module selected in the Platform Manager
Toolbar icon	None
Mouse	Double-click on the connector (FCON, RCON) module in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

Lets you display information on the front (FCON) and rear (RCON) connector modules.

Identification

Displays hardware details for module identification.

Parameter	Description
Module category	"CON" – connector
Module type	dSPACE module type designation
Module variant	Variant identification of the module
dSPACE number	Number of the module type. The dSPACE number is also printed on the circuit board.

Parameter	Description
Serial number	Unique identification number of the module. The serial number is also printed on an adhesive label on a module connector.

Versions

Displays version information of hardware and software components.

Parameter		Description
Module hardware version		Indicates the revision number of the module. The syntax of the revision number as displayed in ConfigurationDesk for RapidPro is "<major revision>.<minor revision>". For example, "4.2" denotes major revision 4, minor revision 2. The major revision number is also printed on the circuit board. It is added to the dSPACE number. Example: DS1621-04, where "04" indicates the major revision.
PIC	PIC boot firmware version	The PIC boot firmware makes it possible to update the PIC firmware.
	PIC firmware version	The PIC firmware provides the basic functionality for communication between the module and the unit.

RapidPro Power Supply Module Properties

Objective

ConfigurationDesk for RapidPro displays information on the power supply modules (PWR) of your RapidPro system.

Module Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	Platform Manager – PWR module (**Properties**)
Shortcut key	**Enter** with PWR module selected in the Platform Manager
Toolbar icon	None
Mouse	Double-click on the PWR module in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

Lets you display information on the power supply (PWR) modules.

Identification

Displays hardware details for module identification.

Parameter	Description
Module category	"SUP" – power supply
Module type	dSPACE module type designation
Module variant	Variant identification of the module
dSPACE number	Number of the module type. The dSPACE number is also printed on the circuit board.

Parameter	Description
Serial number	Unique identification number of the module. The serial number is also printed on an adhesive label on a module connector.

Versions

Displays version information of hardware and software components.

Parameter		Description
Module hardware version		Indicates the revision number of the module. The syntax of the revision number as displayed in ConfigurationDesk for RapidPro is "<major revision>.<minor revision>". For example, "4.2" denotes major revision 4, minor revision 2. The major revision number is also printed on the circuit board. It is added to the dSPACE number. Example: DS1621-04, where "04" indicates the major revision.
PIC	PIC firmware version	The PIC firmware provides the basic functionality for communication between the module and the unit.

SC-AI 4/1 Properties

Objective

Various parameters of the SC-AI 4/1 module and its channels are configurable. You can also display further module and channel properties, such as version information and identification.

Where to go from here

Information in this section

Module Properties....34
To configure the SC-AI 4/1 module, and to display information on it.

Channel Properties....37
To specify properties of a specific channel of the SC-AI 4/1 module.

Module Port Properties....39
To display properties of a module port belonging to a specific channel of the module.

Connector Port Properties....40
To display properties of a connector port belonging to the module or a specific channel.

Module Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Hardware Resource Browser – SC-AI 4/1 Module (**Properties**) ▪ Platform Manager – SC-AI 4/1 Module (**Properties**)
Shortcut key	▪ **Enter** with SC-AI 4/1 module selected in the Hardware Resource Browser ▪ **Enter** with SC-AI 4/1 module selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the SC-AI 4/1 module in the Hardware Resource Browser ▪ Double-click on the SC-AI 4/1 module in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To configure the SC-AI 4/1 module, and to display information on it.

Configuration

Lets you configure module properties valid for all the channels.

Output voltage range Available only, if the module is installed in an SC Unit used as single unit.

You can select different output voltage settings as follows:

Setting	Description
▪ 0 … +5 V ▪ ± 5 V ▪ 0 … +10 V ▪ ± 10 V	The output voltage configuration allows you to adapt the analog outputs of the module to the requirements of dSPACE I/O boards. The output voltage is available on the rear I/O connectors of a single unit.

Input voltage Available only, if the module is installed in a Control Unit or SC Unit in a stack with UCB.

To avoid measuring errors, you must select the polarity (bipolar, unipolar) of the input voltage applied to the input pins of the module channels. This setting takes effect on the voltages internally applied to the Control Units microcontroller channels:

Setting	Description
Unipolar	Use this setting, if you want to connect only positive voltages (+0.1 V … +50 V) to the inputs of the module. In this case, the voltage applied to the Control Unit's microcontroller is set to the range – 5 V … +5 V.
Bipolar	Use this setting, if you want to connect positive *and* negative voltages (±0.1 V … ±50 V) to the inputs of the module. In this case, the voltage applied to the Control Unit's microcontroller is set to the range 0 … +5 V.

For more details on the module, refer to Module Overview (RapidPro System Hardware Reference 🕮).

System monitoring

Lets you show monitored system values of the module.

Channel temperature The temperatures of the temperature sensors are measured on the module's circuit board. The sensors are applied to channels 1 … 4. The values are only available when hardware is connected and switched on.

Identification

Displays hardware details for module identification.

Parameter	Description
Module category	"SC" – signal conditioning (for example, SC-AI 4/1)
Module type	dSPACE module type designation
Module variant	Variant identification of the module
dSPACE number	Number of the module type. The dSPACE number is also printed on the circuit board.
Serial number	Unique identification number of the module. The serial number is also printed on an adhesive label on a module connector.
Module channels	Number of channels provided by the module.
Slot number(s)	Indicates the slot number on the carrier board of the unit where the module is installed.

Versions

Displays version information of hardware and software components.

Parameter		Description
Plug-in version		Indicates the plug-in software version.
Module hardware version		Indicates the revision number of the module. The syntax of the revision number as displayed in ConfigurationDesk for RapidPro is "<major revision>.<minor revision>". For example, "4.2" denotes major revision 4, minor revision 2. The major revision number is also printed on the circuit board. It is added to the dSPACE number. Example: DS1621-04, where "04" indicates the major revision.
PIC	PIC boot firmware version	The PIC boot firmware makes it possible to update the PIC firmware.
	PIC firmware version	The PIC firmware provides the basic functionality for communication between the module and the unit.

Channel Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Channel List – SC-AI 4/1 Channel (**Properties**) ▪ Platform Manager – SC-AI 4/1 Channel (**Properties**)
Shortcut key	▪ **Enter** with SC-AI 4/1 channel selected in the Channel List ▪ **Enter** with SC-AI 4/1 channel selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the SC-AI 4/1 channel in the Channel List ▪ Double-click on the SC-AI 4/1 channel in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To specify properties of a specific channel of the SC-AI 4/1 module.

Configuration

Lets you configure settings of the selected channel.

Note

In module setup mode, the changes are downloaded to the hardware as soon as you click **OK** or **Apply**. They affect the channel's behavior immediately.

Channel name Displays the name of the channel, which you can rename. You can give it a new name with a maximum of 20 characters.

Channels can only be renamed via the Hardware Resource Browser or the Channel List. For further information, refer to How to Change a Channel Name (ConfigurationDesk for RapidPro - Guide 🕮).

Input voltage range Lets you select the input voltage range.

Note

If the module is installed in a Control Unit or SC Unit in a stack with UCB:

You have to connect only bipolar voltages (for example, 0 … +50 V, or 0 … +2 V) or unipolar voltages (for example, ±20 V, or ±5 V) to the module, depending on the setting in the Module Properties (see, Configuration on page 35).

Low-pass filter frequency Lets you select the –3 dB cutoff frequency of the 1st order low-pass filter.

User-configurable circuit

Lets you enter reminder values for parameters which are defined by soldering electronic components to the input circuit of a channel.

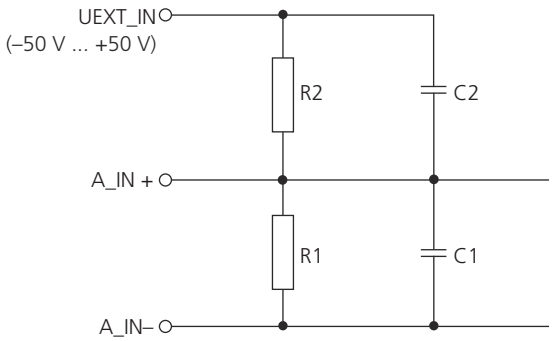
Parameters of user-configurable circuits can only be changed via the Platform Manager. For further information, refer to How to Change Parameters of User-Configurable Circuits (ConfigurationDesk for RapidPro - Guide 🕮).

You can edit only numeric values.

Note

The values entered here are stored on the module's hardware as reminders. They do not affect the channel's behavior.

The following illustration shows the user-configurable circuit of the SC-AI 4/1 module.



R pull-up Lets you enter the reminder value of the *R2* resistor, as shown in the user-configurable circuit above.

R pull-down Lets you enter the reminder value of the *R1* resistor, as shown in the user-configurable circuit above.

C block-up Lets you enter the reminder value of the *C2* capacitor, as shown in the user-configurable circuit above.

C block-down Lets you enter the reminder value of the *C1* capacitor, as shown in the user-configurable circuit above.

For more details of the circuit and for configuration examples, refer to Hardware Configuration (RapidPro System Hardware Reference 🕮).

Identification

Displays hardware details for channel identification.

Description Gives a short description of the channel's function.

Default channel name Shows the default name of the channel.

Module Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a module port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

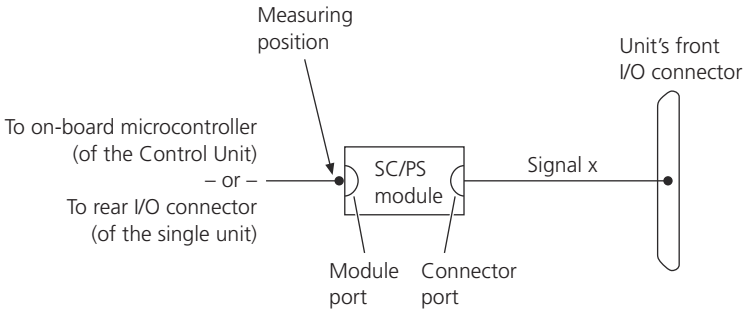
Purpose

To display properties of a module port belonging to a specific channel of the module.

Signal monitoring

Lets you show monitored signal values of the selected module port.

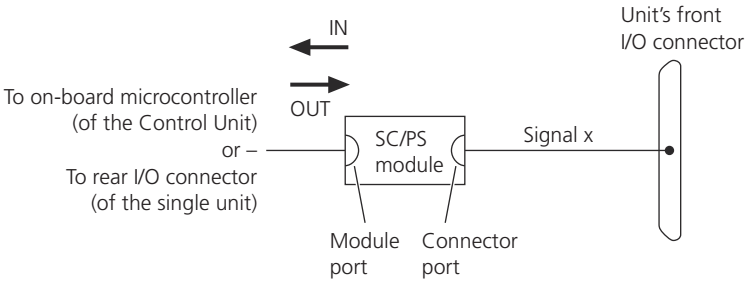
ANA (A_OUT) Displays the voltage of the selected signal. The following illustration shows where the voltage is measured.



The current voltage of each channel is displayed at a typical scan rate of approx. 200 ms. Thus, you can measure only DC signals correctly.

Identification

Data direction Indicates the data direction of the module port (see illustration below).



Port type Describes the characteristics of the selected port.

Connector Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a connector port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display properties of a connector port belonging to the module or a specific channel.

Identification

Signal description Short description of the function of the port.

SC-AI 10/1 Properties

Objective

Various parameters of the SC-AI 10/1 module are software-configurable. You can also display further module and channel properties, such as identification numbers and monitored output voltages.

Where to go from here

Information in this section

Module Properties 42
To display information on the SC-AI 10/1 module.

Channel Properties 44
To specify properties of a specific channel of the SC-AI 10/1 module.

Module Port Properties 46
To display properties of a module port belonging to a specific channel of the module.

Connector Port Properties 47
To display properties of a connector port belonging to the module or a specific channel.

Module Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Hardware Resource Browser – SC-AI 10/1 Module (**Properties**) ▪ Platform Manager – SC-AI 10/1 Module (**Properties**)
Shortcut key	▪ **Enter** with SC-AI 10/1 module selected in the Hardware Resource Browser ▪ **Enter** with SC-AI 10/1 module selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the SC-AI 10/1 module in the Hardware Resource Browser ▪ Double-click on the SC-AI 10/1 module in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display information on the SC-AI 10/1 module.

Identification

Displays hardware details for module identification.

Parameter	Description
Module category	"SC" – signal conditioning (for example, SC-AI 4/1)
Module type	dSPACE module type designation
Module variant	Variant identification of the module
dSPACE number	Number of the module type. The dSPACE number is also printed on the circuit board.
Serial number	Unique identification number of the module. The serial number is also printed on an adhesive label on a module connector.
Module channels	Number of channels provided by the module.
Slot number(s)	Indicates the slot numbers of the adjacent slots on the carrier board of the unit where the module is installed.

Versions

Displays version information of hardware and software components.

Parameter		Description
Plug-in version		Indicates the plug-in software version.
Module hardware version		Indicates the revision number of the module. The syntax of the revision number as displayed in ConfigurationDesk for RapidPro is "<major revision>.<minor revision>". For example, "4.2" denotes major revision 4, minor revision 2. The major revision number is also printed on the circuit board. It is added to the dSPACE number. Example: DS1621-04, where "04" indicates the major revision.
PIC	PIC boot firmware version	The PIC boot firmware makes it possible to update the PIC firmware.
	PIC firmware version	The PIC firmware provides the basic functionality for communication between the module and the unit.

Channel Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Channel List – SC-AI 10/1 Channel (**Properties**) ▪ Platform Manager – SC-AI 10/1 Channel (**Properties**)
Shortcut key	▪ **Enter** with SC-AI 10/1 channel selected in the Channel List ▪ **Enter** with SC-AI 10/1 channel selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the SC-AI 10/1 channel in the Channel List ▪ Double-click on the SC-AI 10/1 channel in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To specify properties of a specific channel of the SC-AI 10/1 module.

Configuration

Lets you configure settings of the selected channel.

Note

In module setup mode, the changes are downloaded to the hardware as soon as you click **OK** or **Apply**. They affect the channel's behavior immediately.

Channel name Displays the name of the channel, which you can rename. You can give it a new name with a maximum of 20 characters.

Channels can only be renamed via the Hardware Resource Browser or the Channel List. For further information, refer to How to Change a Channel Name (ConfigurationDesk for RapidPro - Guide 🕮).

User-configurable circuit

Lets you enter reminder values for parameters which are defined by soldering electronic components to the input circuit of a channel.

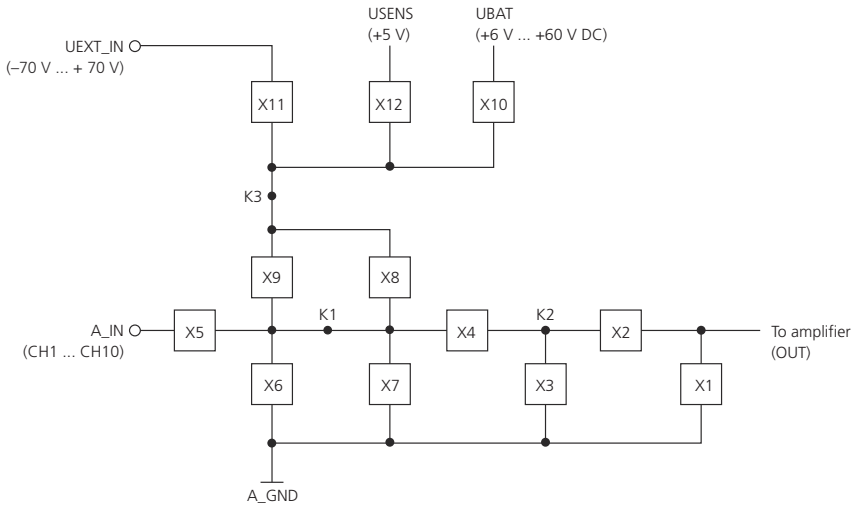
Parameters of user-configurable circuits can only be changed via the Platform Manager. For further information, refer to How to Change Parameters of User-Configurable Circuits (ConfigurationDesk for RapidPro - Guide 🕮).

You can edit only numeric values.

Note

The values entered here are stored on the module's hardware as reminders. They do not affect the channel's behavior.

The following illustration shows the user-configurable circuit of the SC-AI 10/1 module.



Pull-up voltage Lets you enter the reminder value of the pull-up voltage that is selected by soldering a 0 Ω resistor to the solder pads *X10*, *X11*, or *X12*, as shown in the user-configurable circuit above.

R pull-up Lets you enter the reminder value of the *X9* resistor, as shown in the user-configurable circuit above.

R pull-down Lets you enter the reminder value of the *X6* resistor, as shown in the user-configurable circuit above.

Input voltage range (0 V ... 100 V) Lets you enter the reminder value of the input voltage range connected to A_IN. The range can be determined using a voltage divider, for example, with components *X5* and *X7*. The value is set to +5 V by default.

Low-pass filter frequency 1st order (1 Hz ... 65535 Hz) Lets you enter the reminder value of the low-pass filter that is built with the components *X3* and *X4*, as shown in the user-configurable circuit above.

Low-pass filter frequency 2nd order (1 Hz ... 65535 Hz) Lets you enter the reminder value of the low-pass filter that is built with the components *X1*, *X2*, *X3*, and *X4*, as shown in the user-configurable circuit above.

For more details of the circuit and for configuration examples, refer to Hardware Configuration (RapidPro System Hardware Reference 🕮).

Identification

Displays hardware details for channel identification.

Description Gives a short description of the channel's function.

Default channel name Shows the default name of the channel.

Module Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a module port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

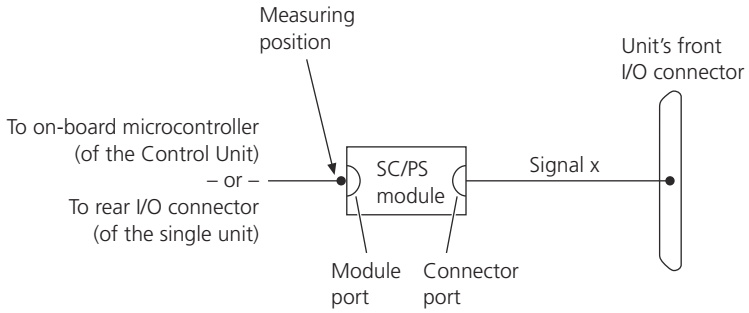
Purpose

To display properties of a module port belonging to a specific channel of the module.

Signal monitoring

Lets you show monitored signal values of the selected module port.

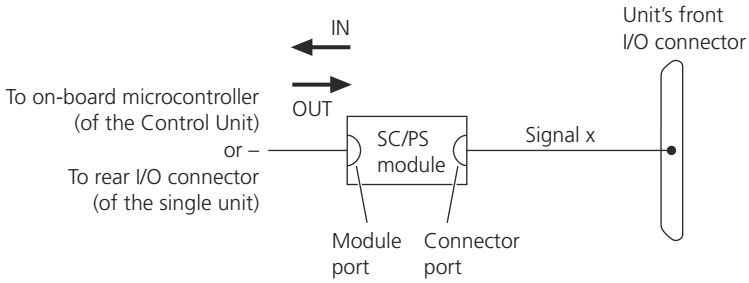
ANA (A_OUT) Displays the voltage of the selected signal. The following illustration shows where the voltage is measured.



The current voltage of each channel is displayed at a typical scan rate of approx. 200 ms. Thus, you can measure only DC signals correctly.

Identification

Data direction Indicates the data direction of the module port (see illustration below).



Port type Describes the characteristics of the selected port.

Connector Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a connector port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display properties of a connector port belonging to the module or a specific channel.

Identification

Signal description Short description of the function of the port.

SC-DI 8/1 Properties

Objective

Various parameters of the SC-DI 8/1 module are software-configurable. You can also display further module and channel properties, such as identification numbers and monitored output voltages.

Where to go from here

Information in this section

Module Properties 49
To display information on the SC-DI 8/1 module.

Channel Properties 51
To specify properties of a specific channel of the SC-DI 8/1 module.

Module Port Properties 53
To configure and to display properties of a module port belonging to a specific channel of the module.

Connector Port Properties 55
To display properties of a connector port belonging to the module or a specific channel.

Module Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Hardware Resource Browser – SC-DI 8/1 Module (**Properties**) ▪ Platform Manager – SC-DI 8/1 Module (**Properties**)
Shortcut key	▪ **Enter** with SC-DI 8/1 module selected in the Hardware Resource Browser ▪ **Enter** with SC-DI 8/1 module selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the SC-DI 8/1 module in the Hardware Resource Browser ▪ Double-click on the SC-DI 8/1 module in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display information on the SC-DI 8/1 module.

Identification

Displays hardware details for module identification.

Parameter	Description
Module category	"SC" – signal conditioning (for example, SC-AI 4/1)
Module type	dSPACE module type designation
Module variant	Variant identification of the module
dSPACE number	Number of the module type. The dSPACE number is also printed on the circuit board.
Serial number	Unique identification number of the module. The serial number is also printed on an adhesive label on a module connector.
Module channels	Number of channels provided by the module.
Slot number(s)	Indicates the slot number on the carrier board of the unit where the module is installed.

Versions

Displays version information of hardware and software components.

Parameter		Description
Plug-in version		Indicates the plug-in software version.
Module hardware version		Indicates the revision number of the module. The syntax of the revision number as displayed in ConfigurationDesk for RapidPro is "<major revision>.<minor revision>". For example, "4.2" denotes major revision 4, minor revision 2. The major revision number is also printed on the circuit board. It is added to the dSPACE number. Example: DS1621-04, where "04" indicates the major revision.
PIC	PIC boot firmware version	The PIC boot firmware makes it possible to update the PIC firmware.
	PIC firmware version	The PIC firmware provides the basic functionality for communication between the module and the unit.

Channel Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Channel List – SC-DI 8/1 Channel (**Properties**) ▪ Platform Manager – SC-DI 8/1 Channel (**Properties**)
Shortcut key	▪ **Enter** with SC-DI 8/1 channel selected in the Channel List ▪ **Enter** with SC-DI 8/1 channel selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the SC-DI 8/1 channel in the Channel List ▪ Double-click on the SC-DI 8/1 channel in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To specify properties of a specific channel of the SC-DI 8/1 module.

Configuration

Lets you configure settings of the selected channel.

Note

In module setup mode, the changes are downloaded to the hardware as soon as you click **OK** or **Apply**. They affect the channel's behavior immediately.

Channel name Displays the name of the channel, which you can rename. You can give it a new name with a maximum of 20 characters.

Channels can only be renamed via the Hardware Resource Browser or the Channel List. For further information, refer to How to Change a Channel Name (ConfigurationDesk for RapidPro - Guide 🕮).

Upper threshold (-39.5V … 39.5V) Lets you specify the upper threshold value of the amplifier comparator stage.

Lower threshold (-39.5V … 39.5V) Lets you specify the lower threshold value of the amplifier comparator stage.

User-configurable circuit

Lets you enter reminder values for parameters which are defined by soldering electronic components to the input circuit of a channel.

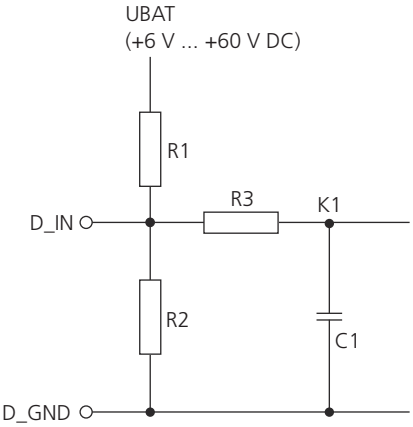
Parameters of user-configurable circuits can only be changed via the Platform Manager. For further information, refer to How to Change Parameters of User-Configurable Circuits (ConfigurationDesk for RapidPro - Guide 🕮).

You can edit only numeric values.

Note

The values entered here are stored on the module's hardware as reminders. They do not affect the channel's behavior.

The following illustration shows the user-configurable circuit of the SC-DI 8/1 module.



R pull-up Lets you enter the reminder value of the *R1* resistor, as shown in the user-configurable circuit above.

R pull-down Lets you enter the reminder value of the *R2* resistor, as shown in the user-configurable circuit above.

Low-pass filter frequency (0.1 kHz … 6553.5 kHz) Lets you enter the reminder value of the low-pass filter that is built with the components *R3* and *C1*, as shown in the user-configurable circuit above.

For more details of the circuit and for configuration examples, refer to Hardware Configuration (RapidPro System Hardware Reference 🕮).

Identification

Displays hardware details for channel identification.

Description Gives a short description of the channel's function.

Default channel name Shows the default name of the channel.

Module Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a module port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To configure and to display properties of a module port belonging to a specific channel of the module.

Configuration

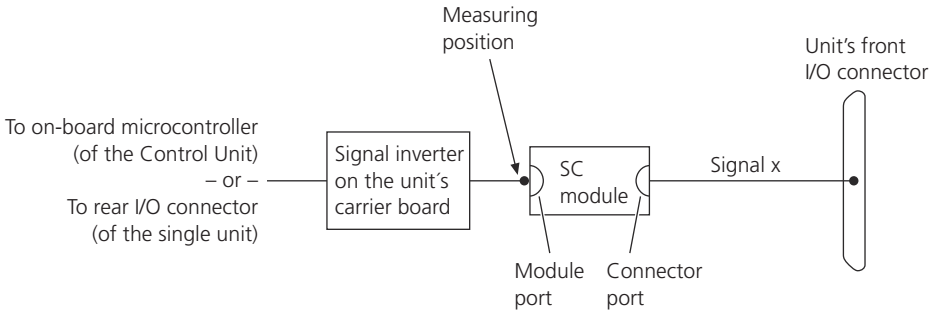
Lets you configure settings of the selected module port.

Signal polarity Lets you select the signal polarity of the module's signal that is connected either to the on-board microcontroller of the Control Unit or to the rear I/O connector of the single SC Unit.

Signal monitoring

Lets you show monitored signal values of the selected module port.

DIG (D_OUT) Displays the level of the selected signal. The following illustration shows where the level is measured.



The current status of each channel is displayed at a typical scan rate of approx. 200 ms.

The following table shows the possible displays:

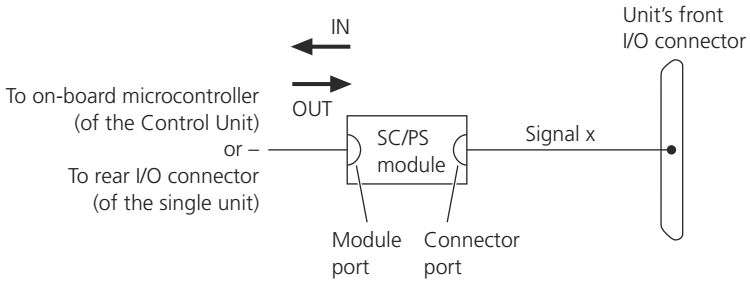
Display	Description
"0"	Low level
"1"	High level

Note

The signal that comes to the unit's microcontroller can differ to the monitored value, if you change the signal polarity (see Signal polarity).

Identification

Data direction Indicates the data direction of the module port (see illustration below).



Port type Describes the characteristics of the selected port.

Connector Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a connector port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display properties of a connector port belonging to the module or a specific channel.

Identification

Signal description Short description of the function of the port.

SC-DO 8/1 Properties

Objective

Various parameters of the SC-DO 8/1 module and its channels are configurable. You can also display further module and channel properties, such as identification numbers and monitored input voltages.

Where to go from here

Information in this section

Module Properties....56
To display information on the SC-DO 8/1 module.

Channel Properties....58
To specify properties of a specific channel of the SC-DO 8/1 module.

Module Port Properties....59
To configure and to display properties of a module port belonging to a specific channel of the module.

Connector Port Properties....61
To display properties of a connector port belonging to the module or a specific channel.

Module Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Hardware Resource Browser – SC-DO 8/1 Module (**Properties**) ▪ Platform Manager – SC-DO 8/1 Module (**Properties**)
Shortcut key	▪ **Enter** with SC-DO 8/1 module selected in the Hardware Resource Browser ▪ **Enter** with SC-DO 8/1 module selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the SC-DO 8/1 module in the Hardware Resource Browser ▪ Double-click on the SC-DO 8/1 module in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display information on the SC-DO 8/1 module.

Identification

Displays hardware details for module identification.

Parameter	Description
Module category	"SC" – signal conditioning (for example, SC-AI 4/1)
Module type	dSPACE module type designation
Module variant	Variant identification of the module
dSPACE number	Number of the module type. The dSPACE number is also printed on the circuit board.
Serial number	Unique identification number of the module. The serial number is also printed on an adhesive label on a module connector.
Module channels	Number of channels provided by the module.
Slot number(s)	Indicates the slot number on the carrier board of the unit where the module is installed.

Versions

Displays version information of hardware and software components.

Parameter		Description
Plug-in version		Indicates the plug-in software version.
Module hardware version		Indicates the revision number of the module. The syntax of the revision number as displayed in ConfigurationDesk for RapidPro is "<major revision>.<minor revision>". For example, "4.2" denotes major revision 4, minor revision 2. The major revision number is also printed on the circuit board. It is added to the dSPACE number. Example: DS1621-04, where "04" indicates the major revision.
PIC	PIC boot firmware version	The PIC boot firmware makes it possible to update the PIC firmware.
	PIC firmware version	The PIC firmware provides the basic functionality for communication between the module and the unit.

Channel Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Channel List – SC-DO 8/1 Channel (**Properties**) ▪ Platform Manager – SC-DO 8/1 Channel (**Properties**)
Shortcut key	▪ **Enter** with SC-DO 8/1 channel selected in the Channel List ▪ **Enter** with SC-DO 8/1 channel selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the SC-DO 8/1 channel in the Channel List ▪ Double-click on the SC-DO 8/1 channel in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To specify properties of a specific channel of the SC-DO 8/1 module.

Configuration

Lets you configure settings of the selected channel.

Note

In module setup mode, the changes are downloaded to the hardware as soon as you click **OK** or **Apply**. They affect the channel's behavior immediately.

Channel name Displays the name of the channel, which you can rename. You can give it a new name with a maximum of 20 characters.

Channels can only be renamed via the Hardware Resource Browser or the Channel List. For further information, refer to How to Change a Channel Name (ConfigurationDesk for RapidPro - Guide 🕮).

User-configurable circuit

Lets you enter reminder values for parameters which are defined by soldering electronic components to the input circuit of a channel.

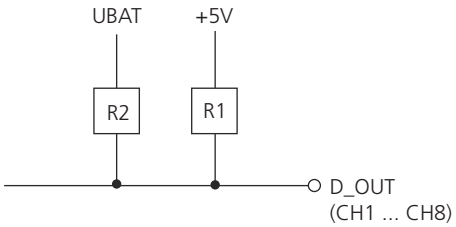
Parameters of user-configurable circuits can only be changed via the Platform Manager. For further information, refer to How to Change Parameters of User-Configurable Circuits (ConfigurationDesk for RapidPro - Guide 🕮).

You can edit only numeric values.

Note

The values entered here are stored on the module's hardware as reminders. They do not affect the channel's behavior.

The following illustration shows the user-configurable circuit of the SC-DO 8/1 module.



Pull-up voltage Lets you select the reminder value of the pull-up voltage that is selected by soldering the pull-up resistor *R1* or *R2*, as shown in the user-configurable circuit above.

R pull-up Lets you enter the reminder value of the *R1* resistor or *R2* resistor, as shown in the user-configurable circuit above.

For more details of the circuit and for configuration examples, refer to Hardware Configuration (RapidPro System Hardware Reference 🕮).

Identification

Displays hardware details for channel identification.

Description Gives a short description of the channel's function.

Default channel name Shows the default name of the channel.

Module Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None

Mouse	In the hardware tree of the properties dialog, select a module port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To configure and to display properties of a module port belonging to a specific channel of the module.

Configuration

Signal polarity Lets you select the signal polarity of the module's output signal.

⚠ WARNING

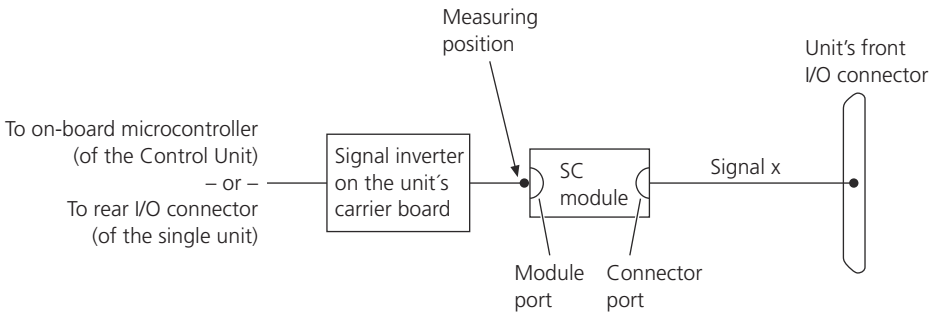
Changing the signal polarity can damage the connected devices.

- Before changing this parameter, consider the implications that the change will have.
- You can also invert the signal via the RTI RapidPro Control Unit Blockset (if used). If you are not sure what the actual polarity is, measure/monitor the signals before connecting a device.

Signal monitoring

Lets you show monitored signal values of the selected module port.

DIG (D_OUT) Displays the level of the selected signal. The following illustration shows where the level is measured.



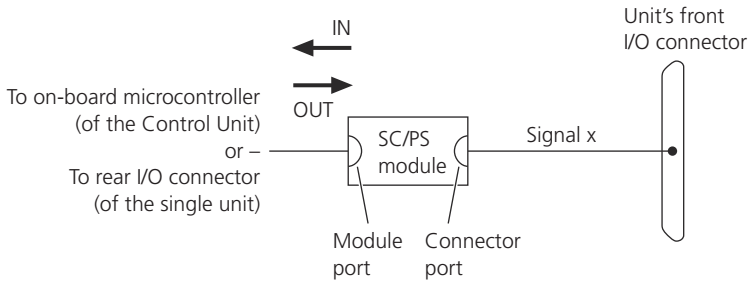
The current status of each channel is displayed at a typical scan rate of approx. 200 ms.

The following table shows the possible displays:

Display	Description
"0"	Low level
"1"	High level

Identification

Data direction Indicates the data direction of the module port (see illustration below).



Port type Describes the characteristics of the selected port.

Connector Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a connector port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose	To display properties of a connector port belonging to the module or a specific channel.	
Identification	**Signal description**	Short description of the function of the port.

SC-DO 8/2 Properties

Objective

Various parameters of the SC-DO 8/2 module and its channels are configurable. You can also display further module and channel properties, such as identification numbers and monitored input voltages.

Where to go from here

Information in this section

Module Properties 63
To display information on the SC-DO 8/2 module.

Channel Properties 65
To specify properties of a specific channel of the SC-DO 8/2 module.

Module Port Properties 67
To configure and to display properties of a module port belonging to a specific channel of the module.

Connector Port Properties 69
To display properties of a connector port belonging to the module or a specific channel.

Module Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Hardware Resource Browser – SC-DO 8/2 Module (**Properties**) ▪ Platform Manager – SC-DO 8/2 Module (**Properties**)
Shortcut key	▪ **Enter** with SC-DO 8/2 module selected in the Hardware Resource Browser ▪ **Enter** with SC-DO 8/2 module selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the SC-DO 8/2 module in the Hardware Resource Browser ▪ Double-click on the SC-DO 8/2 module in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display information on the SC-DO 8/2 module.

System monitoring

Lets you show monitored system values of the module.

Current temperature Displays a temperature measured via a sensor on the module's circuit board. The monitored temperature is for troubleshooting purposes.

Identification

Displays hardware details for module identification.

Parameter	Description
Module category	"SC" – signal conditioning (for example, SC-AI 4/1)
Module type	dSPACE module type designation
Module variant	Variant identification of the module
dSPACE number	Number of the module type. The dSPACE number is also printed on the circuit board.
Serial number	Unique identification number of the module. The serial number is also printed on an adhesive label on a module connector.
Module channels	Number of channels provided by the module.
Slot number(s)	Indicates the slot number on the carrier board of the unit where the module is installed.

Versions

Displays version information of hardware and software components.

Parameter	Description
Plug-in version	Indicates the plug-in software version.
Module hardware version	Indicates the revision number of the module. The syntax of the revision number as displayed in ConfigurationDesk for RapidPro is

Parameter		Description
		"<major revision>.<minor revision>". For example, "4.2" denotes major revision 4, minor revision 2. The major revision number is also printed on the circuit board. It is added to the dSPACE number. Example: DS1621-04, where "04" indicates the major revision.
PIC	PIC boot firmware version	The PIC boot firmware makes it possible to update the PIC firmware.
	PIC firmware version	The PIC firmware provides the basic functionality for communication between the module and the unit.

Channel Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Channel List – SC-DO 8/2 Channel (**Properties**) ▪ Platform Manager – SC-DO 8/2 Channel (**Properties**)
Shortcut key	▪ **Enter** with SC-DO 8/2 channel selected in the Channel List ▪ **Enter** with SC-DO 8/2 channel selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the SC-DO 8/2 channel in the Channel List ▪ Double-click on the SC-DO 8/2 channel in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To specify properties of a specific channel of the SC-DO 8/2 module.

Configuration

Lets you configure settings of the selected channel.

> **Note**
>
> In module setup mode, the changes are downloaded to the hardware as soon as you click OK or Apply. They affect the channel's behavior immediately.

Channel name Displays the name of the channel, which you can rename. You can give it a new name with a maximum of 20 characters.

Channels can only be renamed via the Hardware Resource Browser or the Channel List. For further information, refer to How to Change a Channel Name (ConfigurationDesk for RapidPro - Guide 🕮).

Output driver mode Lets you select the output driver mode:

Setting	Description
Push/pull (default)	The output is a digital signal (TTL/CMOS-level). You can use it to control externally connected power amplifiers, such as electric motors, or ignition stages.
High side	The channel's output switches a load to the high side. The load is connected on the other side to ground. You can use the high-side mode, for example, with two or more channels wired together as a *wired OR*.
Low side	The channel's output switches a load to the low side. The load is connected on the other side to a voltage.

For a connection example for the different modes, refer to Connection to Peripheral Devices (RapidPro System Hardware Reference 🕮).

Output driver state in idle mode Lets you specify the output driver state if the RapidPro system is in idle mode:

Setting	Description
Tristate (default)	The channel's output is set to high impedance. The output is set to a defined enable state.
High	The channel's output is set to high level.
Low	The channel's output is set to low level.

Note

The module's temperature is measured on its circuit board. If the temperature reaches a critical value, the outputs are enabled. This takes place even if the RapidPro system is in idle mode. Consequently, the current state of the outputs can differ from your configured setting of the Output driver state in idle mode parameter.

For information on the idle mode, refer to Characteristics of Application States and Operating Modes (ConfigurationDesk for RapidPro - Guide 🕮).

Identification

Displays hardware details for channel identification.

Description Gives a short description of the channel's function.

Default channel name Shows the default name of the channel.

Module Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a module port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To configure and to display properties of a module port belonging to a specific channel of the module.

Configuration

Signal polarity Lets you select the signal polarity of the module's output signal.

⚠ WARNING

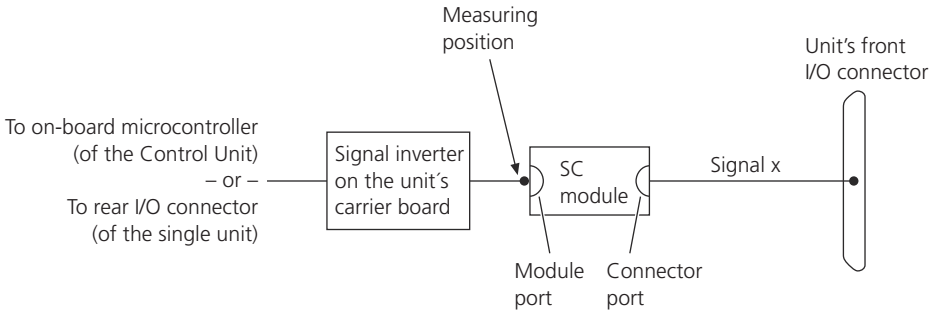
Changing the signal polarity can damage the connected devices.

- Before changing this parameter, consider the implications that the change will have.

Signal monitoring

Lets you show monitored signal values of the selected module port.

DIG (D_OUT) Displays the level of the selected signal. The following illustration shows where the level is measured.



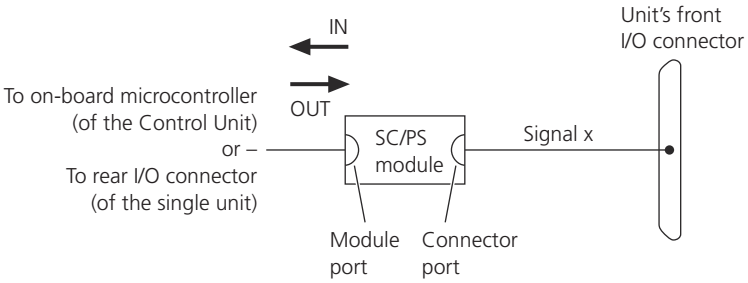
The current status of each channel is displayed at a typical scan rate of approx. 200 ms.

The following table shows the possible displays:

Display	Description
"0"	Low level
"1"	High level

Identification

Data direction Indicates the data direction of the module port (see illustration below).



Port type Describes the characteristics of the selected port.

Connector Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a connector port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display properties of a connector port belonging to the module or a specific channel.

Identification

Signal description Short description of the function of the port.

SC-SENS 4/1 Properties

Objective

The SC-SENS 4/1 module is software-configurable.

Where to go from here

Information in this section

Module Properties 70
To display information on the SC-SENS 4/1 module.

Channel Properties 72
To specify properties of a specific channel of the SC-SENS 4/1 module.

Connector Port Properties 74
To display properties of a connector port belonging to the module or a specific channel.

Module Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Hardware Resource Browser – SC-SENS 4/1 Module (**Properties**) ▪ Platform Manager – SC-SENS 4/1 Module (**Properties**)
Shortcut key	▪ **Enter** with SC-SENS 4/1 module selected in the Hardware Resource Browser ▪ **Enter** with SC-SENS 4/1 module selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the SC-SENS 4/1 module in the Hardware Resource Browser ▪ Double-click on the SC-SENS 4/1 module in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display information on the SC-SENS 4/1 module.

System monitoring

Lets you show monitored system values of the module.

Channel temperature The temperatures of the temperature sensors are measured on the module's circuit board. The sensors are applied to channels 1 … 4.

Identification

Displays hardware details for module identification.

Parameter	Description
Module category	"SC" – signal conditioning (for example, SC-AI 4/1)
Module type	dSPACE module type designation
Module variant	Variant identification of the module
dSPACE number	Number of the module type. The dSPACE number is also printed on the circuit board.
Serial number	Unique identification number of the module. The serial number is also printed on an adhesive label on a module connector.
Module channels	Number of channels provided by the module.
Slot number(s)	Indicates the slot number on the carrier board of the unit where the module is installed.

Versions

Displays version information of hardware and software components.

Parameter	Description
Plug-in version	Indicates the plug-in software version.
Module hardware version	Indicates the revision number of the module. The syntax of the revision number as displayed in ConfigurationDesk for RapidPro is

Parameter		Description
		"<major revision>.<minor revision>". For example, "4.2" denotes major revision 4, minor revision 2. The major revision number is also printed on the circuit board. It is added to the dSPACE number. Example: DS1621-04, where "04" indicates the major revision.
PIC	PIC boot firmware version	The PIC boot firmware makes it possible to update the PIC firmware.
	PIC firmware version	The PIC firmware provides the basic functionality for communication between the module and the unit.

Channel Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Channel List – SC-SENS 4/1 Channel (**Properties**) ▪ Platform Manager – SC-SENS 4/1 Channel (**Properties**)
Shortcut key	▪ **Enter** with SC-SENS 4/1 channel selected in the Channel List ▪ **Enter** with SC-SENS 4/1 channel selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the SC-SENS 4/1 channel in the Channel List ▪ Double-click on the SC-SENS 4/1 channel in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To specify properties of a specific channel of the SC-SENS 4/1 module.

Configuration

Lets you configure settings of the selected channel.

> **Note**
>
> In module setup mode, the changes are downloaded to the hardware as soon as you click OK or Apply. They affect the channel's behavior immediately.

Channel name Displays the name of the channel, which you can rename. You can give it a new name with a maximum of 20 characters.

Channels can only be renamed via the Hardware Resource Browser or the Channel List. For further information, refer to How to Change a Channel Name (ConfigurationDesk for RapidPro - Guide 🕮).

Enable diagnostic warnings Lets you enable/disable diagnostic function of the module.

You can enable diagnostic function so that warnings are displayed in ConfigurationDesk's Platform Manager as well as diagnostic errors (see How to Enable/Disable the Display of Diagnostic Warnings (ConfigurationDesk for RapidPro - Guide 🕮)).

Output voltage (2 V … 20 V) Lets you specify the output voltage.

You can configure the output voltage of the SC-SENS 4/1 module on each channel individually:

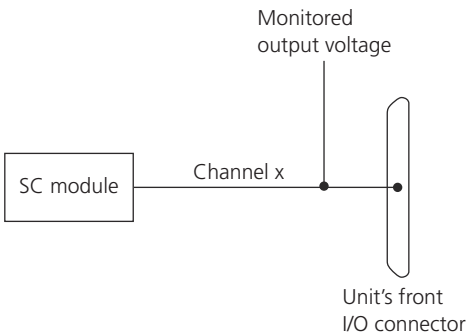
Range/Setting	Factory Default Setting
+2 V … +20 V	+5 V

> **Tip**
>
> Negative output voltages can be obtained by reversing the load's polarity.

Signal monitoring

Lets you show monitored signal values of the selected channel.

Monitored output voltage Displays the output voltage of the selected channel. The following illustration shows where the output voltage is measured.



The current output voltage of each channel is displayed at a typical scan rate of approx. 200 ms.

Identification

Displays hardware details for channel identification.

Description Gives a short description of the channel's function.

Default channel name Shows the default name of the channel.

Connector Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a connector port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display properties of a connector port belonging to the module or a specific channel.

Identification

Signal description Short description of the function of the port.

SC-CCDI 6/1 Properties

Objective

Various parameters of the SC-CCDI 6/1 module are software-configurable. You can also display further module and channel properties, such as identification numbers and monitored output voltages.

Where to go from here

Information in this section

Module Properties 75
To display information on the SC-CCDI 6/1 module.

Channel Properties 77
To specify properties of a specific channel of the SC-CCDI 6/1 module.

Module Port Properties 80
To configure and to display properties of a module port belonging to a specific channel of the module.

Connector Port Properties 82
To display properties of a connector port belonging to the module or a specific channel.

Module Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Hardware Resource Browser – SC-CCDI 6/1 Module (**Properties**) ▪ Platform Manager – SC-CCDI 6/1 Module (**Properties**)
Shortcut key	▪ **Enter** with SC-CCDI 6/1 module selected in the Hardware Resource Browser ▪ **Enter** with SC-CCDI 6/1 module selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the SC-CCDI 6/1 module in the Hardware Resource Browser ▪ Double-click on the SC-CCDI 6/1 module in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display information on the SC-CCDI 6/1 module.

Identification

Displays hardware details for module identification.

Parameter	Description
Module category	"SC" – signal conditioning (for example, SC-AI 4/1)
Module type	dSPACE module type designation
Module variant	Variant identification of the module
dSPACE number	Number of the module type. The dSPACE number is also printed on the circuit board.
Serial number	Unique identification number of the module. The serial number is also printed on an adhesive label on a module connector.
Module channels	Number of channels provided by the module.
Slot number(s)	Indicates the slot number on the carrier board of the unit where the module is installed.

Versions

Displays version information of hardware and software components.

Parameter		Description
Plug-in version		Indicates the plug-in software version.
Module hardware version		Indicates the revision number of the module. The syntax of the revision number as displayed in ConfigurationDesk for RapidPro is "<major revision>.<minor revision>". For example, "4.2" denotes major revision 4, minor revision 2. The major revision number is also printed on the circuit board. It is added to the dSPACE number. Example: DS1621-04, where "04" indicates the major revision.
PIC	PIC boot firmware version	The PIC boot firmware makes it possible to update the PIC firmware.
	PIC firmware version	The PIC firmware provides the basic functionality for communication between the module and the unit.

Channel Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Channel List – SC-CCDI 6/1 Channel (**Properties**) ▪ Platform Manager – SC-CCDI 6/1 Channel (**Properties**)
Shortcut key	▪ **Enter** with SC-CCDI 6/1 channel selected in the Channel List ▪ **Enter** with SC-CCDI 6/1 channel selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the SC-CCDI 6/1 channel in the Channel List ▪ Double-click on the SC-CCDI 6/1 channel in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To specify properties of a specific channel of the SC-CCDI 6/1 module.

Configuration

Lets you configure settings of the selected channel.

Note

In module setup mode, the changes are downloaded to the hardware as soon as you click **OK** or **Apply**. They affect the channel's behavior immediately.

Channel name Displays the name of the channel, which you can rename. You can give it a new name with a maximum of 20 characters.

Channels can only be renamed via the Hardware Resource Browser or the Channel List. For further information, refer to How to Change a Channel Name (ConfigurationDesk for RapidPro - Guide 🕮).

Upper threshold (-39.5 V … 39.5 V) – (Only available for the camshaft channel 1 … 4) Lets you specify the upper threshold value of the amplifier comparator stage.

Lower threshold (-39.5 V … 39.5 V) – (Only available for the camshaft channel 1 … 4) Lets you specify the lower threshold value of the amplifier comparator stage.

User-configurable circuit

Lets you enter reminder values for parameters which are defined by soldering electronic components to the input circuit of a channel.

Parameters of user-configurable circuits can only be changed via the Platform Manager. For further information, refer to How to Change Parameters of User-Configurable Circuits (ConfigurationDesk for RapidPro - Guide 🕮).

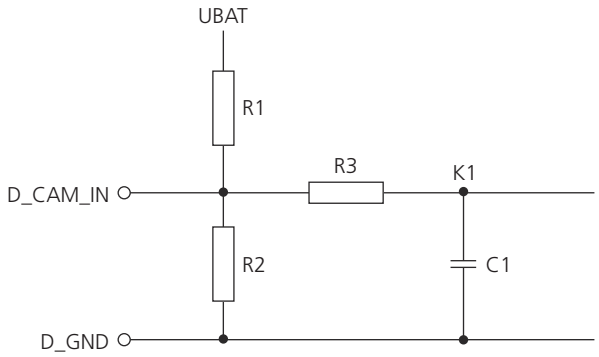
You can edit only numeric values.

Note

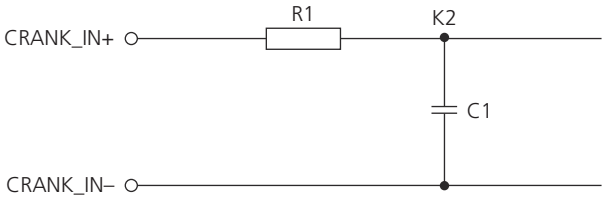
The values entered here are stored on the module's hardware as reminders. They do not affect the channel's behavior.

The following illustration shows the user-configurable circuit of the SC-CCDI 6/1 module.

Camshaft input channel



Crankshaft input channel



R pull-up – (Only available for the camshaft channel 1 … 4) Lets you enter the reminder value of the *R1* resistor, as shown in the user-configurable circuit above.

R pull-down – (Only available for the camshaft channel 1 … 4) Lets you enter the reminder value of the *R2* resistor, as shown in the user-configurable circuit above.

Low-pass filter frequency (0.1 kHz … 6553.5 kHz) Lets you enter the reminder value of the low-pass filter that is built with the components *R3* (R1 for channel 5 … 6) and *C1*, as shown in the user-configurable circuit above.

For more details of the circuit and for configuration examples, refer to Hardware Configuration (RapidPro System Hardware Reference 🕮).

Identification

Displays hardware details for channel identification.

Description Gives a short description of the channel's function.

Default channel name Shows the default name of the channel.

Module Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a module port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To configure and to display properties of a module port belonging to a specific channel of the module.

Configuration

Lets you configure settings of the selected module port.

Signal polarity Lets you select the signal polarity of the module's signal that is connected either to the on-board microcontroller of the Control Unit or to the rear I/O connector of the single SC Unit.

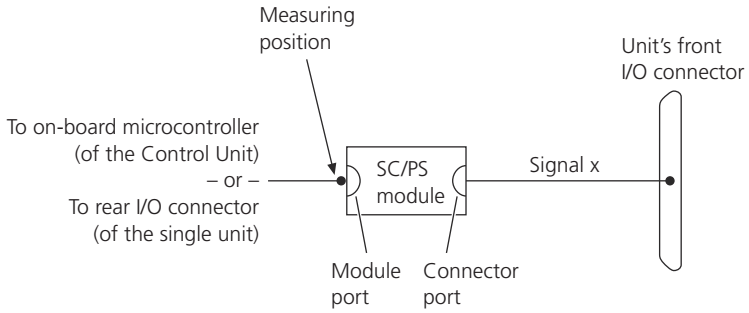
Note

If you use the RTI RapidPro Control Unit Blockset, you must use the blockset to invert camshaft and crankshaft signals. You must not invert the signals via ConfigurationDesk for RapidPro.

Signal monitoring

Lets you show monitored signal values of the selected module port.

D_CAM, D_CRANK Displays the level of the selected signal. The following illustration shows where the level is measured.



The current status of each channel is displayed at a typical scan rate of approx. 200 ms.

The following table shows the possible displays:

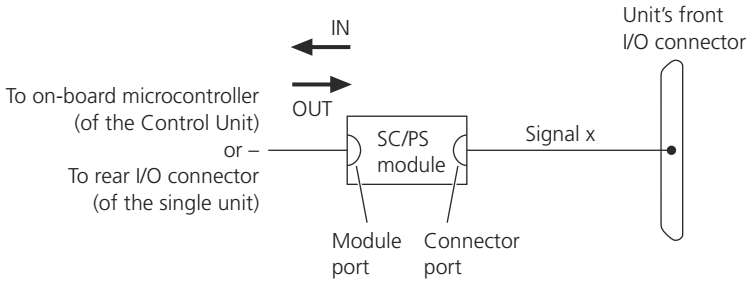
Display	Description
"0"	Low level
"1"	High level

Note

The signal that comes to the unit's microcontroller can differ to the monitored value, if you change the signal polarity (see Signal polarity).

Identification

Data direction Indicates the data direction of the module port (see illustration below).



Port type Describes the characteristics of the selected port.

Connector Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a connector port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display properties of a connector port belonging to the module or a specific channel.

Identification

Signal description Short description of the function of the port.

SC-EGOS 2/1 Properties

Objective

Various parameters of the SC-EGOS 2/1 module are software-configurable. You can also display further module and channel properties, such as identification numbers and monitored output voltages.

Where to go from here

Information in this section

Module Properties 83
To display information on the SC-EGOS 2/1 module.

Channel Properties 85
To specify properties of a specific channel of the SC-EGOS 2/1 module.

Module Port Properties 87
To display properties of a module port belonging to a specific channel of the module.

Connector Port Properties 89
To display properties of a connector port belonging to the module or a specific channel.

Module Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Hardware Resource Browser – SC-EGOS 2/1 Module (**Properties**) ▪ Platform Manager – SC-EGOS 2/1 Module (**Properties**)
Shortcut key	▪ **Enter** with SC-EGOS 2/1 module selected in the Hardware Resource Browser ▪ **Enter** with SC-EGOS 2/1 module selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the SC-EGOS 2/1 module in the Hardware Resource Browser ▪ Double-click on the SC-EGOS 2/1 module in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display information on the SC-EGOS 2/1 module.

Identification

Displays hardware details for module identification.

Parameter	Description
Module category	"SC" – signal conditioning (for example, SC-AI 4/1)
Module type	dSPACE module type designation
Module variant	Variant identification of the module
dSPACE number	Number of the module type. The dSPACE number is also printed on the circuit board.
Serial number	Unique identification number of the module. The serial number is also printed on an adhesive label on a module connector.
Module channels	Number of channels provided by the module.
Slot number(s)	Indicates the slot number on the carrier board of the unit where the module is installed.

Versions

Displays version information of hardware and software components.

Parameter		Description
Plug-in version		Indicates the plug-in software version.
Module hardware version		Indicates the revision number of the module. The syntax of the revision number as displayed in ConfigurationDesk for RapidPro is "<major revision>.<minor revision>". For example, "4.2" denotes major revision 4, minor revision 2. The major revision number is also printed on the circuit board. It is added to the dSPACE number. Example: DS1621-04, where "04" indicates the major revision.
PIC	PIC boot firmware version	The PIC boot firmware makes it possible to update the PIC firmware.
	PIC firmware version	The PIC firmware provides the basic functionality for communication between the module and the unit.

Parameter	Description
CJ125	Indicates the version numbers of the Bosch CJ125 ICs. The module provides two CJ125s, one for each channel. The syntax of the revision numbers as displayed in ConfigurationDesk for RapidPro is assigned by the manufacturer.

Channel Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Channel List – SC-EGOS 2/1 Channel (**Properties**) ▪ Platform Manager – SC-EGOS 2/1 Channel (**Properties**)
Shortcut key	▪ **Enter** with SC-EGOS 2/1 channel selected in the Channel List ▪ **Enter** with SC-EGOS 2/1 channel selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the SC-EGOS 2/1 channel in the Channel List ▪ Double-click on the SC-EGOS 2/1 channel in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To specify properties of a specific channel of the SC-EGOS 2/1 module.

Configuration

Lets you configure settings of the selected channel.

Note

In module setup mode, the changes are downloaded to the hardware as soon as you click OK or Apply. They affect the channel's behavior immediately.

Channel name Displays the name of the channel, which you can rename. You can give it a new name with a maximum of 20 characters.

Channels can only be renamed via the Hardware Resource Browser or the Channel List. For further information, refer to How to Change a Channel Name (ConfigurationDesk for RapidPro - Guide 🕮).

Note

Complete knowledge on the connected lambda probes is recommended for specifying the channel parameters of the SC-EGOS 2/1 module. Refer to the technical documentation of the specific lambda probe.

Supported lambda probe Indicates the supported lambda probe type the SC-EGOS 2/1 module is intended for.

Lambda measurement range Lets you specify the lambda measurement range. Restricting of the measurement range raises the accuracy of measurement.

Pump reference current Lets you specify the current on the internal resistance of the connected lambda probe. Change this parameter only according to the technical specifications of the lambda probe.

⚠ WARNING

Setting the pump reference current ≠ 0 A can damage the connected lambda probe.

To avoid damage, the selected reference current must not exceed the maximum current specified in the probe's documentation.

Short circuit detection of UN to UBAT Lets you enable or disable the occurrence of the diagnostic message 'Short to UBAT: UN, IA, IP, VM'.

Detection is disabled by default to suppress the diagnostic message 'Short to UBAT: UN, IA, IP, VM' if there is a short circuit between UN and UBAT. If there is a short circuit between UBAT and IA, IP, or VM, the message is displayed even if the detection is disabled.

If detection is enabled the message can occur without a reason, if the Pump reference current (see above) is ≠ 0 A and the internal resistance Ri of the lambda probe is high (cold probe).

For an overview of all the available diagnostic messages, refer to Diagnostics (RapidPro System Hardware Reference 🕮).

Identification

Displays hardware details for channel identification.

Description Gives a short description of the channel's function.

Default channel name Shows the default name of the channel.

Module Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a module port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

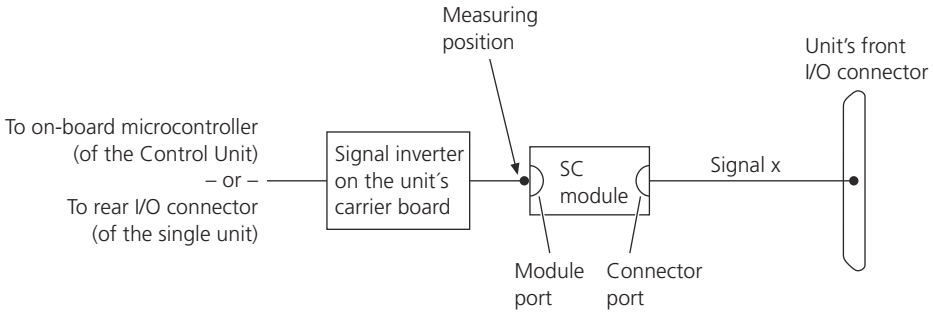
Purpose

To display properties of a module port belonging to a specific channel of the module.

Signal monitoring

Lets you show monitored signal values of the selected module port.

EGOS_HEATER, EGOS_UR_CTRL, EGOS_UR, EGOS_UA Displays the voltage of the selected signal. The following illustration shows where the voltage is measured.



Valid for the digital signals *EGOS_HEATER, EGOS_UR_CTRL*:

- The current status of each channel is displayed at a typical scan rate of approx. 200 ms.

  The following table shows the possible displays:

Display	Description
"0"	Low level
"1"	High level

Valid for the analog signals *EGOS_UR, EGOS_UA*:

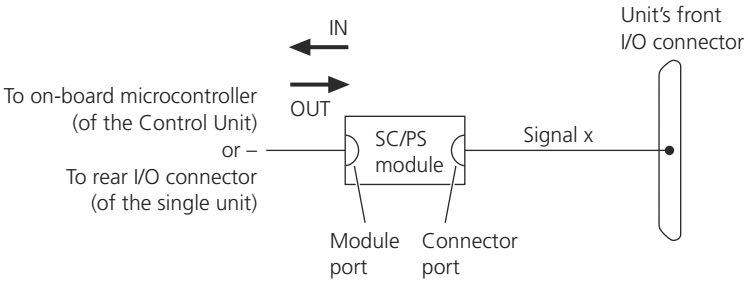
- The current voltage of each channel is displayed at a typical scan rate of approx. 200 ms. Thus, you can measure only DC signals correctly.

Note

The signal that comes to the unit's microcontroller can differ to the monitored value, if you change the signal polarity.

Identification

Data direction Indicates the data direction of the module port (see illustration below).



Port type Describes the characteristics of the selected port.

Connector Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a connector port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display properties of a connector port belonging to the module or a specific channel.

Identification

Signal description Short description of the function of the port.

SC-UHEGO 2/1 Properties

Objective

Various parameters of the SC-UHEGO 2/1 module and its channels are configurable. You can also display further module and channel properties, such as identification numbers.

Where to go from here

Information in this section

Module Properties....90
To display information on the SC-UHEGO 2/1 module.

Channel Properties....92
To specify properties of a specific channel of the SC-UHEGO 2/1 module.

Module Port Properties....93
To display properties of a module port belonging to a specific channel of the module.

Connector Port Properties....94
To display properties of a connector port belonging to the module or a specific channel.

Module Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Hardware Resource Browser – SC-UHEGO 2/1 Module (**Properties**) ▪ Platform Manager – SC-UHEGO 2/1 Module (**Properties**)
Shortcut key	▪ **Enter** with SC-UHEGO 2/1 module selected in the Hardware Resource Browser ▪ **Enter** with SC-UHEGO 2/1 module selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the SC-UHEGO 2/1 module in the Hardware Resource Browser ▪ Double-click on the SC-UHEGO 2/1 module in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display information on the SC-UHEGO 2/1 module.

Identification

Displays hardware details for module identification.

Parameter	Description
Module category	"SC" – signal conditioning (for example, SC-AI 4/1)
Module type	dSPACE module type designation
Module variant	Variant identification of the module
dSPACE number	Number of the module type. The dSPACE number is also printed on the circuit board.
Serial number	Unique identification number of the module. The serial number is also printed on an adhesive label on a module connector.
Module channels	Number of channels provided by the module.
Slot number(s)	Indicates the slot number on the carrier board of the unit where the module is installed.

Versions

Displays version information of hardware and software components.

Parameter		Description
Plug-in version		Indicates the plug-in software version.
Module hardware version		Indicates the revision number of the module. The syntax of the revision number as displayed in ConfigurationDesk for RapidPro is "<major revision>.<minor revision>". For example, "4.2" denotes major revision 4, minor revision 2. The major revision number is also printed on the circuit board. It is added to the dSPACE number. Example: DS1621-04, where "04" indicates the major revision.
PIC	PIC boot firmware version	The PIC boot firmware makes it possible to update the PIC firmware.
	PIC firmware version	The PIC firmware provides the basic functionality for communication between the module and the unit.

Channel Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Channel List – SC-UHEGO 2/1 Channel (**Properties**) ▪ Platform Manager – SC-UHEGO 2/1 Channel (**Properties**)
Shortcut key	▪ **Enter** with SC-UHEGO 2/1 channel selected in the Channel List ▪ **Enter** with SC-UHEGO 2/1 channel selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the SC-UHEGO 2/1 channel in the Channel List ▪ Double-click on the SC-UHEGO 2/1 channel in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To specify properties of a specific channel of the SC-UHEGO 2/1 module.

Configuration

Lets you configure settings of the selected channel.

Note

In module setup mode, the changes are downloaded to the hardware as soon as you click **OK** or **Apply**. They affect the channel's behavior immediately.

Channel name Displays the name of the channel, which you can rename. You can give it a new name with a maximum of 20 characters.

Channels can only be renamed via the Hardware Resource Browser or the Channel List. For further information, refer to How to Change a Channel Name (ConfigurationDesk for RapidPro - Guide 🕮).

Note

Complete knowledge on the connected lambda probes is recommended for specifying the channel parameters of the SC-UHEGO 2/1 module. Refer to the technical documentation of the specific lambda probe.

Supported lambda probe Lets you select which lambda probe is supported.

Note

Set PLUS3.x if you connect a PLUS5.0 or PLUS5.1 probe to a channel.

Lambda measurement range Lets you select the lambda measurement range:

Setting	Description
Wide range	The air to fuel ratio (AFR) is measured in the range 10 … ∞.
Stoichiometric range	The air to fuel ratio (AFR) is measured in the range 12 … 25. **Tip** You can use the stoichiometric range for a more detailed view compared to the wide range. This provides more accurate measurement.

Identification

Displays hardware details for channel identification.

Description Gives a short description of the channel's function.

Default channel name Shows the default name of the channel.

Module Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a module port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display properties of a module port belonging to a specific channel of the module.

Signal monitoring

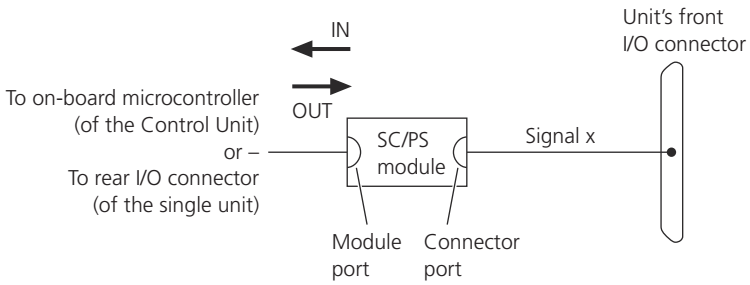
Lets you show monitored signal values of the selected module port.

Note

The signal monitoring values displayed are for support purposes only. They do not represent actual measurement results.

Identification

Data direction Indicates the data direction of the module port (see illustration below).



Port type Describes the characteristics of the selected port.

Connector Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None

Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a connector port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display properties of a connector port belonging to the module or a specific channel.

Identification

Signal description Short description of the function of the port.

SC-KNOCK 4/1 Properties

Objective

Various parameters of the SC-KNOCK 4/1 module and its channels are configurable. You can also display further module and channel properties, such as identification numbers.

Where to go from here

Information in this section

Module Properties....96
To display information on the SC-KNOCK 4/1 module.

Channel Properties....98
To specify properties of a specific channel of the SC-KNOCK 4/1 module.

Module Port Properties....101
To configure and to display properties of a module port belonging to a specific channel of the module.

Connector Port Properties....102
To display properties of a connector port belonging to the module or a specific channel.

Module Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Hardware Resource Browser – SC-KNOCK 4/1 Module (**Properties**) ▪ Platform Manager – SC-KNOCK 4/1 Module (**Properties**)
Shortcut key	▪ **Enter** with SC-KNOCK 4/1 module selected in the Hardware Resource Browser ▪ **Enter** with SC-KNOCK 4/1 module selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the SC-KNOCK 4/1 module in the Hardware Resource Browser ▪ Double-click on the SC-KNOCK 4/1 module in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display information on the SC-KNOCK 4/1 module.

Module Self Test

Test summary for channels 1(3) and 2(4) Lets you test whether the module's two Bosch CC196 ICs function properly. The following displays are possible:

- Not executed (is displayed every time you open the properties dialog)
- Passed
- Failed

When you select the dialog a start button is displayed to start the self test.

Identification

Displays hardware details for module identification.

Parameter	Description
Module category	"SC" – signal conditioning (for example, SC-AI 4/1)
Module type	dSPACE module type designation
Module variant	Variant identification of the module
dSPACE number	Number of the module type. The dSPACE number is also printed on the circuit board.
Serial number	Unique identification number of the module. The serial number is also printed on an adhesive label on a module connector.
Module channels	Number of channels provided by the module.
Slot number(s)	Indicates the slot number on the carrier board of the unit where the module is installed.

Versions

Displays version information of hardware and software components.

Parameter	Description
Plug-in version	Indicates the plug-in software version.
Module hardware version	Indicates the revision number of the module. The syntax of the revision number as displayed in ConfigurationDesk for RapidPro is

Parameter		Description
		"<major revision>.<minor revision>". For example, "4.2" denotes major revision 4, minor revision 2. The major revision number is also printed on the circuit board. It is added to the dSPACE number. Example: DS1621-04, where "04" indicates the major revision.
PIC	PIC boot firmware version	The PIC boot firmware makes it possible to update the PIC firmware.
	PIC firmware version	The PIC firmware provides the basic functionality for communication between the module and the unit.
PLD		The programmable logic device (PLD) is used to support the hardware configuration of the module.
CC169		Indicates the version numbers of the Bosch CC169 knock detection ICs. The module provides two CC169s, one for channel 1 and channel 2, and one for channel 3 and channel 4. The syntax of the revision numbers as displayed in ConfigurationDesk for RapidPro is assigned by the manufacturer.

Channel Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Channel List – SC-KNOCK 4/1 Channel (**Properties**) ▪ Platform Manager – SC-KNOCK 4/1 Channel (**Properties**)
Shortcut key	▪ **Enter** with SC-KNOCK 4/1 channel selected in the Channel List ▪ **Enter** with SC-KNOCK 4/1 channel selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the SC-KNOCK 4/1 channel in the Channel List ▪ Double-click on the SC-KNOCK 4/1 channel in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To specify properties of a specific channel of the SC-KNOCK 4/1 module.

Configuration

Lets you configure settings of the selected channel.

Note

In module setup mode, the changes are downloaded to the hardware as soon as you click OK or Apply. They affect the channel's behavior immediately.

Channel name Displays the name of the channel, which you can rename. You can give it a new name with a maximum of 20 characters.

Channels can only be renamed via the Hardware Resource Browser or the Channel List. For further information, refer to How to Change a Channel Name (ConfigurationDesk for RapidPro - Guide 🕮).

Enable diagnostic warnings Lets you enable/disable diagnostic function of the module.

You can enable diagnostic function so that warnings are displayed in ConfigurationDesk's Platform Manager as well as diagnostic errors (see How to Enable/Disable the Display of Diagnostic Warnings (ConfigurationDesk for RapidPro - Guide 🕮)).

Filter settings FIR filter (A, B, C) Lets you select the filter characteristics for the 3 FIR filters (A, B, C) of each channel.

The following table shows the entries of an FIR filter and the descriptions:

Entry	Description
x:	Number of the entry
Fc1:xxxx	Lower 6 dB cutoff frequency in Hz
Fce:xxxx	Center frequency in Hz
Fc2:xxxx	Upper 6 dB cutoff frequency in Hz
order:xxx	Order of the FIR filter
xxxxxx	Comment (max. 20 character)

Input gain Lets you select the gain of the input signal for each channel.

For more details of the circuit and for configuration examples, refer to Module Overview (RapidPro System Hardware Reference 🕮).

User-configurable circuit

Lets you enter reminder values for parameters which are defined by soldering electronic components to the input circuit of a channel.

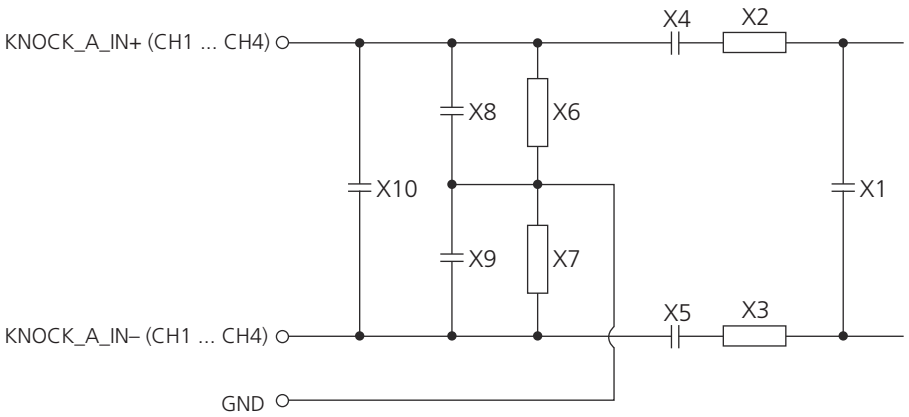
Parameters of user-configurable circuits can only be changed via the Platform Manager. For further information, refer to How to Change Parameters of User-Configurable Circuits (ConfigurationDesk for RapidPro - Guide 🕮).

You can edit only numeric values.

Note

The values entered here are stored on the module's hardware as reminders. They do not affect the channel's behavior.

The following illustration shows the simplified circuit of the SC-KNOCK 4/1 module.



For more details of the circuit and for configuration examples, refer to Hardware Configuration (RapidPro System Hardware Reference 🕮).

Identification

Displays hardware details for channel identification.

Description Gives a short description of the channel's function.

Default channel name Shows the default name of the channel.

Module Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a module port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

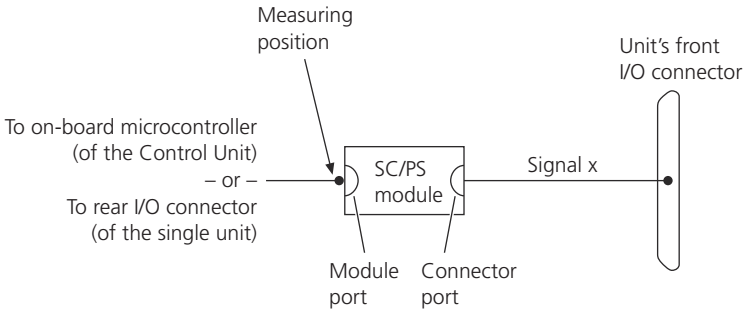
Purpose

To configure and to display properties of a module port belonging to a specific channel of the module.

Signal monitoring

Lets you show monitored signal values of the selected module port.

KNOCK_SERDAT, KNOCK_MWCTRL, KNOCK_CHSEL1, KNOCK_CHSEL2 Displays the level of the selected signal. The following illustration shows where the level is measured.



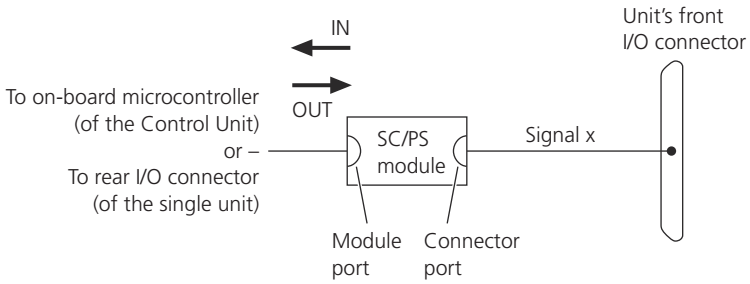
The current status of each channel is displayed at a typical scan rate of approx. 200 ms.

The following table shows the possible displays:

Display	Description
"0"	Low level
"1"	High level

Identification

Data direction Indicates the data direction of the module port (see illustration below).



Port type Describes the characteristics of the selected port.

Connector Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a connector port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose	To display properties of a connector port belonging to the module or a specific channel.	
Identification	**Signal description**	Short description of the function of the port.

SC-TC 8/1 Properties

Objective

Various parameters of the SC-TC 8/1 module and its channels are configurable. You can also display further module and channel properties, such as identification numbers.

Where to go from here

Information in this section

Module Properties 104
To display information on the SC-TC 8/1 module.

Channel Properties 106
To specify properties of a specific channel of the SC-TC 8/1 module.

Module Port Properties 107
To display properties of a module port belonging to a specific channel of the module.

Connector Port Properties 108
To display properties of a connector port belonging to the module or a specific channel.

Module Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Hardware Resource Browser – SC-TC 8/1 Module (**Properties**) ▪ Platform Manager – SC-TC 8/1 Module (**Properties**)
Shortcut key	▪ **Enter** with SC-TC 8/1 module selected in the Hardware Resource Browser ▪ **Enter** with SC-TC 8/1 module selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the SC-TC 8/1 module in the Hardware Resource Browser ▪ Double-click on the SC-TC 8/1 module in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display information on the SC-TC 8/1 module.

Identification

Displays hardware details for module identification.

Parameter	Description
Module category	"SC" – signal conditioning (for example, SC-TC 8/1)
Module type	dSPACE module type designation
Module variant	Variant identification of the module
dSPACE number	Number of the module type. The dSPACE number is also printed on the circuit board.
Serial number	Unique identification number of the module. The serial number is also printed on an adhesive label on a module connector.
Module channels	Number of channels provided by the module.
Slot number(s)	Indicates the slot numbers of the adjacent slots on the carrier board of the unit where the module is installed.

Versions

Displays version information of hardware and software components.

Parameter	Description
Plug-in version	Indicates the plug-in software version.
Module hardware version	Indicates the revision number of the module. The syntax of the revision number as displayed in ConfigurationDesk for RapidPro is "<major revision>.<minor revision>". For example, "4.2" denotes major revision 4, minor revision 2. The major revision number is also printed on the circuit board. It is added to the dSPACE number. Example: DS1621-04, where "04" indicates the major revision.
Thermocouple sensor type	Indicates which dSPACE splitter cable is connected and consequently which sensor types can be connected to the RapidPro system. If no or a not supported cable is connected, a hyphen is displayed.

Parameter		Description
PIC	PIC boot firmware version	The PIC boot firmware makes it possible to update the PIC firmware.
	PIC firmware version	The PIC firmware provides the basic functionality for communication between the module and the unit.
PLD		The programmable logic device (PLD) is used to support the hardware configuration of the module.

Channel Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Channel List – SC-TC 8/1 Channel (Properties) ▪ Platform Manager – SC-TC 8/1 Channel (Properties)
Shortcut key	▪ **Enter** with SC-TC 8/1 channel selected in the Channel List ▪ **Enter** with SC-TC 8/1 channel selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the SC-TC 8/1 channel in the Channel List ▪ Double-click on the SC-TC 8/1 channel in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To specify properties of a specific channel of the SC-TC 8/1 module.

Configuration

Lets you configure settings of the selected channel.

> **Note**
>
> In module setup mode, the changes are downloaded to the hardware as soon as you click OK or Apply. They affect the channel's behavior immediately.

Channel name Displays the name of the channel, which you can rename. You can give it a new name with a maximum of 20 characters.

Channels can only be renamed via the Hardware Resource Browser or the Channel List. For further information, refer to How to Change a Channel Name (ConfigurationDesk for RapidPro - Guide 🕮).

Enable diagnostic warnings Lets you enable/disable diagnostic function of the module.

You can enable diagnostic function so that warnings are displayed in ConfigurationDesk's Platform Manager as well as diagnostic errors (see How to Enable/Disable the Display of Diagnostic Warnings (ConfigurationDesk for RapidPro - Guide 🕮)).

Identification

Displays hardware details for channel identification.

Description Gives a short description of the channel's function.

Default channel name Shows the default name of the channel.

Module Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a module port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

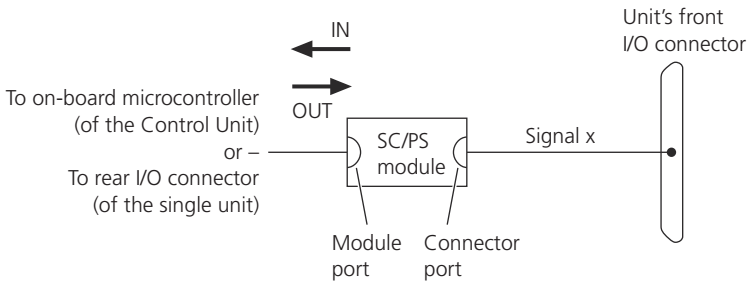
- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display properties of a module port belonging to a specific channel of the module.

Identification

Data direction Indicates the data direction of the module port (see illustration below).



Port type Describes the characteristics of the selected port.

Connector Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a connector port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display properties of a connector port belonging to the module or a specific channel.

Identification

Signal description Short description of the function of the port.

PS-FBD 2/1 Properties

Objective

Various parameters of the PS-FBD 2/1 module and its channels are configurable. You can also display further module and channel properties, such as identification numbers.

Where to go from here

Information in this section

Module Properties 110
To configure the PS-FBD 2/1 module, and to display information on it.

Channel Properties 112
To specify properties of a specific channel of the PS-FBD 2/1 module.

Module Port Properties 115
To configure and to display properties of a module port belonging to a specific channel of the module.

Connector Port Properties 116
To display properties of a connector port belonging to the module or a specific channel.

Module Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Hardware Resource Browser – PS-FBD 2/1 Module (**Properties**) ▪ Platform Manager – PS-FBD 2/1 Module (**Properties**)
Shortcut key	▪ **Enter** with PS-FBD 2/1 module selected in the Hardware Resource Browser ▪ **Enter** with PS-FBD 2/1 module selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the PS-FBD 2/1 module in the Hardware Resource Browser ▪ Double-click on the PS-FBD 2/1 module in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To configure the PS-FBD 2/1 module, and to display information on it.

Configuration

Lets you configure module properties valid for all the channels.

Output voltage range Only adjustable if the module is installed in a Power Unit that is used as single unit.

Lets you define the voltage output range of the current measurement devices.

System monitoring

Lets you show monitored system values of the module.

Current temperature Displays a temperature measured via a sensor on the module's circuit board. The monitored temperature is for troubleshooting purposes.

Identification

Displays hardware details for module identification.

Parameter	Description
Module category	"PS" – power stage (for example, PS-FBD 2/1)
Module type	dSPACE module type designation
Module variant	Variant identification of the module
dSPACE number	Number of the module type. The dSPACE number is also printed on the circuit board.
Serial number	Unique identification number of the module. The serial number is also printed on an adhesive label on a module connector.
Module channels	Number of channels provided by the module.
Slot number(s)	Indicates the slot number on the carrier board of the unit where the module is installed.

Versions

Displays version information of hardware and software components.

Parameter		Description
Plug-in version		Indicates the plug-in software version.
Module hardware version		Indicates the revision number of the module. The syntax of the revision number as displayed in ConfigurationDesk for RapidPro is "<major revision>.<minor revision>". For example, "4.2" denotes major revision 4, minor revision 2. The major revision number is also printed on the circuit board. It is added to the dSPACE number. Example: DS1621-04, where "04" indicates the major revision.
PIC	PIC boot firmware version	The PIC boot firmware makes it possible to update the PIC firmware.
	PIC firmware version	The PIC firmware provides the basic functionality for communication between the module and the unit.

Channel Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Channel List – PS-FBD 2/1 Channel (**Properties**) ▪ Platform Manager – PS-FBD 2/1 Channel (**Properties**)
Shortcut key	▪ **Enter** with PS-FBD 2/1 channel selected in the Channel List ▪ **Enter** with PS-FBD 2/1 channel selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the PS-FBD 2/1 channel in the Channel List ▪ Double-click on the PS-FBD 2/1 channel in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To specify properties of a specific channel of the PS-FBD 2/1 module.

Configuration

Lets you configure settings of the selected channel.

Note

In module setup mode, the changes are downloaded to the hardware as soon as you click OK or Apply. They affect the channel's behavior immediately.

Channel name Displays the name of the channel, which you can rename. You can give it a new name with a maximum of 20 characters.

Channels can only be renamed via the Hardware Resource Browser or the Channel List. For further information, refer to How to Change a Channel Name (ConfigurationDesk for RapidPro - Guide 🕮).

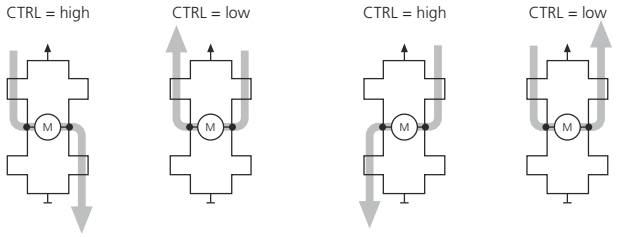
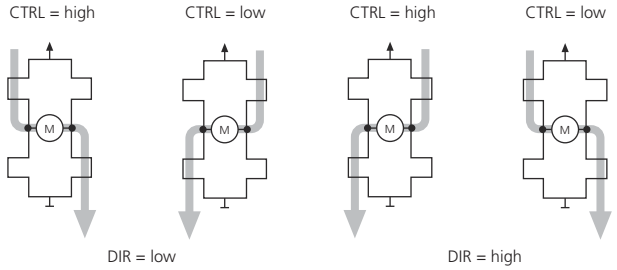
Enable diagnostic warnings Lets you enable/disable diagnostic function of the module.

You can enable diagnostic function so that warnings are displayed in ConfigurationDesk's Platform Manager as well as diagnostic errors (see How to Enable/Disable the Display of Diagnostic Warnings (ConfigurationDesk for RapidPro - Guide 🕮)).

Chopper current limit Lets you edit the chopper current limit. It defines the maximum output current (current limit) of a channel.

Chopper switch-off time Lets you edit the chopper switch-off time. It defines the time period for which the output current is switched off, after the current limit has been reached.

Operation mode Lets you select the operation mode that has an effect on the switching status of the power stages depending on the control inputs (CTRL, DIR) as shown in the table below:

Setting	Description	Switching Status of the Power Stages
Slow decay	The supply voltage (UBAT) and a short-circuit is generated alternately for the load.	Slow decay mode 
Fast decay	An alternating voltage is generated for the load. If you use the module as a low-side or high-side driver, it is recommended to use only the fast decay mode.	Fast decay mode 

⚠ WARNING

Choosing the fast-decay mode can cause uncontrolled movements and/or material damage of connected devices.

In fast-decay mode both input signals (FB_DIR_IN and FB_CTRL_IN) are set to low level if you build a Simulink model without connecting PWM signals to the full-bridge. This means, that a connected motor starts if you download your application and no PWM signals are connected to the module inputs.

To avoid risk of injury and material damage:

- When building the Simulink model, think through the effects of the connections you are planning and the settings of the modules.
- Ensure that no one is in the potential danger zone of the device (test bench, etc.) when the changes first take effect.

Current measurement range Lets you select the current measurement range.

Low-pass filter frequency Lets you select the cutoff frequency of the filter in the current measurement device.

Identification

Displays hardware details for channel identification.

Description Gives a short description of the channel's function.

Default channel name Shows the default name of the channel.

Module Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a module port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To configure and to display properties of a module port belonging to a specific channel of the module.

Configuration

Lets you configure settings of the selected module port.

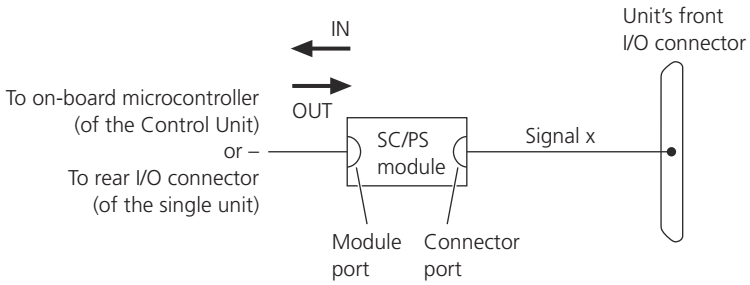
Signal polarity Lets you select the polarity of control input signals.

The power stages are controlled by the control inputs FB_CTRL and FB_DIR (see Configuration on page 113):

- The FB_CTRL input controls whether the current is increased (= "1") or reduced (= "0").
- The FB_DIR input gives the direction of output current.

Identification

Data direction Indicates the data direction of the module port (see illustration below).



Port type Describes the characteristics of the selected port.

Connector Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a connector port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display properties of a connector port belonging to the module or a specific channel.

Identification

Signal description Short description of the function of the port.

PS-HSD 6/1 Properties

Objective

Various parameters of the PS-HSD 6/1 module are configurable. You can also display further module and channel properties, such as identification numbers.

Where to go from here

Information in this section

Module Properties 117
To display information on the PS-HSD 6/1 module.

Channel Properties 119
To specify properties of a specific channel of the PS-HSD 6/1 module.

Module Port Properties 122
To configure and to display properties of a module port belonging to a specific channel of the module.

Connector Port Properties 123
To display properties of a connector port belonging to the module or a specific channel.

Module Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Hardware Resource Browser – PS-HSD 6/1 Module (**Properties**) ▪ Platform Manager – PS-HSD 6/1 Module (**Properties**)
Shortcut key	▪ **Enter** with PS-HSD 6/1 module selected in the Hardware Resource Browser ▪ **Enter** with PS-HSD 6/1 module selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the PS-HSD 6/1 module in the Hardware Resource Browser ▪ Double-click on the PS-HSD 6/1 module in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display information on the PS-HSD 6/1 module.

System monitoring

Lets you show monitored system values of the module.

Current temperature Displays a temperature measured via a sensor on the module's circuit board. The monitored temperature is for troubleshooting purposes.

Identification

Displays hardware details for module identification.

Parameter	Description
Module category	"PS" – power stage (for example, PS-FBD 2/1)
Module type	dSPACE module type designation
Module variant	Variant identification of the module
dSPACE number	Number of the module type. The dSPACE number is also printed on the circuit board.
Serial number	Unique identification number of the module. The serial number is also printed on an adhesive label on a module connector.
Module channels	Number of channels provided by the module.
Slot number(s)	Indicates the slot number on the carrier board of the unit where the module is installed.

Versions

Displays version information of hardware and software components.

Parameter	Description
Plug-in version	Indicates the plug-in software version.
Module hardware version	Indicates the revision number of the module. The syntax of the revision number as displayed in ConfigurationDesk for RapidPro is

Parameter		Description
		"<major revision>.<minor revision>". For example, "4.2" denotes major revision 4, minor revision 2. The major revision number is also printed on the circuit board. It is added to the dSPACE number. Example: DS1621-04, where "04" indicates the major revision.
PIC	PIC boot firmware version	The PIC boot firmware makes it possible to update the PIC firmware.
	PIC firmware version	The PIC firmware provides the basic functionality for communication between the module and the unit.

Channel Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Channel List – PS-HSD 6/1 Channel (**Properties**) ▪ Platform Manager – PS-HSD 6/1 Channel (**Properties**)
Shortcut key	▪ **Enter** with PS-HSD 6/1 channel selected in the Channel List ▪ **Enter** with PS-HSD 6/1 channel selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the PS-HSD 6/1 channel in the Channel List ▪ Double-click on the PS-HSD 6/1 channel in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To specify properties of a specific channel of the PS-HSD 6/1 module.

Configuration

Lets you configure settings of the selected channel.

> **Note**
>
> In module setup mode, the changes are downloaded to the hardware as soon as you click OK or Apply. They affect the channel's behavior immediately.

Channel name Displays the name of the channel, which you can rename. You can give it a new name with a maximum of 20 characters.

Channels can only be renamed via the Hardware Resource Browser or the Channel List. For further information, refer to How to Change a Channel Name (ConfigurationDesk for RapidPro - Guide 🕮).

Enable diagnostic warnings Lets you enable/disable diagnostic function of the module.

You can enable diagnostic function so that warnings are displayed in ConfigurationDesk's Platform Manager as well as diagnostic errors (see How to Enable/Disable the Display of Diagnostic Warnings (ConfigurationDesk for RapidPro - Guide 🕮)).

User-configurable circuit

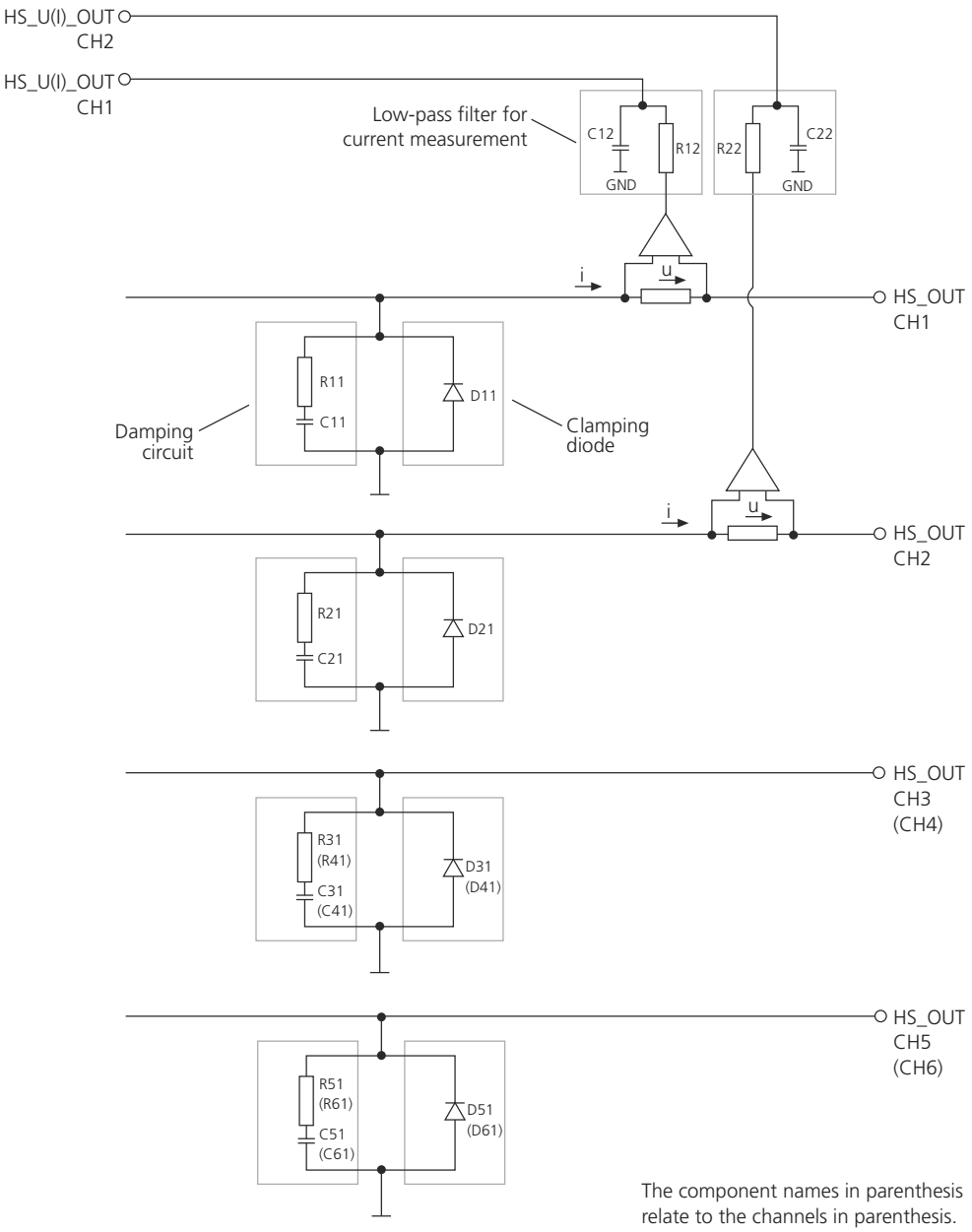
Lets you enter reminder values for parameters which are defined by soldering electronic components to the input circuit of a channel.

Parameters of user-configurable circuits can only be changed via the Platform Manager. For further information, refer to How to Change Parameters of User-Configurable Circuits (ConfigurationDesk for RapidPro - Guide 🕮).

You can edit only numeric values.

> **Note**
>
> The values entered here are stored on the module's hardware as reminders. They do not affect the channel's behavior.

The following illustration shows the user-configurable circuit of the PS-HSD 6/1 module.



The component names in parenthesis relate to the channels in parenthesis.

External clamping diode Lets you select as reminder if the external clamping diode (*D11*, *D21*, *D31*, *D41*, *D51*, or *D61*) is equipped in the user-configurable output circuit shown above.

Damping resistor Lets you enter the reminder value of the damping resistor (*R11*, *R21*, *R31*, *R41*, *R51*, or *R61*) as shown in the user-configurable circuit above.

Damping capacitor Lets you enter the reminder value of the damping capacitor (*C11*, *C21*, *C31*, *C41*, *C51*, or *C61*) as shown in the user-configurable circuit above.

Low-pass filter frequency (1 Hz … 10000 Hz) – (Only available for channel 1 … 2) Lets you enter the reminder value of the low-pass filter frequency (*R12/C12*, or *R22/C22*) as shown in the user-configurable circuit above.

For more details of the circuit and for configuration examples, refer to Hardware Configuration (RapidPro System Hardware Reference 🕮).

Identification

Displays hardware details for channel identification.

Description Gives a short description of the channel's function.

Default channel name Shows the default name of the channel.

Module Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a module port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To configure and to display properties of a module port belonging to a specific channel of the module.

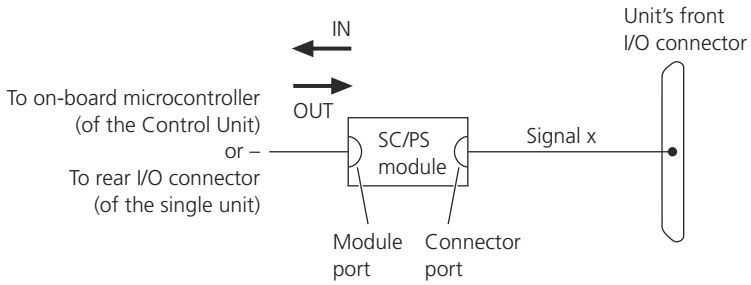
Configuration

Lets you configure settings of the selected module port.

Signal polarity Lets you select the signal polarity of the module's signal.

Identification

Data direction Indicates the data direction of the module port (see illustration below).



Port type Describes the characteristics of the selected port.

Connector Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a connector port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display properties of a connector port belonging to the module or a specific channel.

Identification

Signal description Short description of the function of the port.

PS-LSD 6/1 Properties

Objective

Various parameters of the PS-LSD 6/1 module are configurable. You can also display further module and channel properties, such as identification numbers.

Where to go from here

Information in this section

Module Properties 124
To display information on the PS-LSD 6/1 module.

Channel Properties 126
To specify properties of a specific channel of the PS-LSD 6/1 module.

Module Port Properties 129
To configure and to display properties of a module port belonging to a specific channel of the module.

Connector Port Properties 130
To display properties of a connector port belonging to the module or a specific channel.

Module Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Hardware Resource Browser – PS-LSD 6/1 Module (**Properties**) ▪ Platform Manager – PS-LSD 6/1 Module (**Properties**)
Shortcut key	▪ **Enter** with PS-LSD 6/1 module selected in the Hardware Resource Browser ▪ **Enter** with PS-LSD 6/1 module selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the PS-LSD 6/1 module in the Hardware Resource Browser ▪ Double-click on the PS-LSD 6/1 module in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display information on the PS-LSD 6/1 module.

System monitoring

Lets you show monitored system values of the module.

Current temperature Displays a temperature measured via a sensor on the module's circuit board. The monitored temperature is for troubleshooting purposes.

Identification

Displays hardware details for module identification.

Parameter	Description
Module category	"PS" – power stage (for example, PS-FBD 2/1)
Module type	dSPACE module type designation
Module variant	Variant identification of the module
dSPACE number	Number of the module type. The dSPACE number is also printed on the circuit board.
Serial number	Unique identification number of the module. The serial number is also printed on an adhesive label on a module connector.
Module channels	Number of channels provided by the module.
Slot number(s)	Indicates the slot number on the carrier board of the unit where the module is installed.

Versions

Displays version information of hardware and software components.

Parameter	Description
Plug-in version	Indicates the plug-in software version.
Module hardware version	Indicates the revision number of the module. The syntax of the revision number as displayed in ConfigurationDesk for RapidPro is

Parameter		Description
		"<major revision>.<minor revision>". For example, "4.2" denotes major revision 4, minor revision 2. The major revision number is also printed on the circuit board. It is added to the dSPACE number. Example: DS1621-04, where "04" indicates the major revision.
PIC	PIC boot firmware version	The PIC boot firmware makes it possible to update the PIC firmware.
	PIC firmware version	The PIC firmware provides the basic functionality for communication between the module and the unit.

Channel Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Channel List – PS-LSD 6/1 Channel (**Properties**) ▪ Platform Manager – PS-LSD 6/1 Channel (**Properties**)
Shortcut key	▪ **Enter** with PS-LSD 6/1 channel selected in the Channel List ▪ **Enter** with PS-LSD 6/1 channel selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the PS-LSD 6/1 channel in the Channel List ▪ Double-click on the PS-LSD 6/1 channel in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To specify properties of a specific channel of the PS-LSD 6/1 module.

Configuration

Lets you configure settings of the selected channel.

> **Note**
>
> In module setup mode, the changes are downloaded to the hardware as soon as you click OK or Apply. They affect the channel's behavior immediately.

Channel name Displays the name of the channel, which you can rename. You can give it a new name with a maximum of 20 characters.

Channels can only be renamed via the Hardware Resource Browser or the Channel List. For further information, refer to How to Change a Channel Name (ConfigurationDesk for RapidPro - Guide 🕮).

Enable diagnostic warnings Lets you enable/disable diagnostic function of the module.

You can enable diagnostic function so that warnings are displayed in ConfigurationDesk's Platform Manager as well as diagnostic errors (see How to Enable/Disable the Display of Diagnostic Warnings (ConfigurationDesk for RapidPro - Guide 🕮)).

Nominal output current (0 A … 6 A) Displays the channel's output current. You can configure the output values of channels 1 … 4 via solder bridges (BR1 … BR12) to adapt the output to different loads. The output values of channels 5 and 6 are fixed and cannot be changed. For information on changing a channel's output value, refer to Configuring the Channel Output Value (RapidPro System Hardware Reference 🕮).

User-configurable circuit

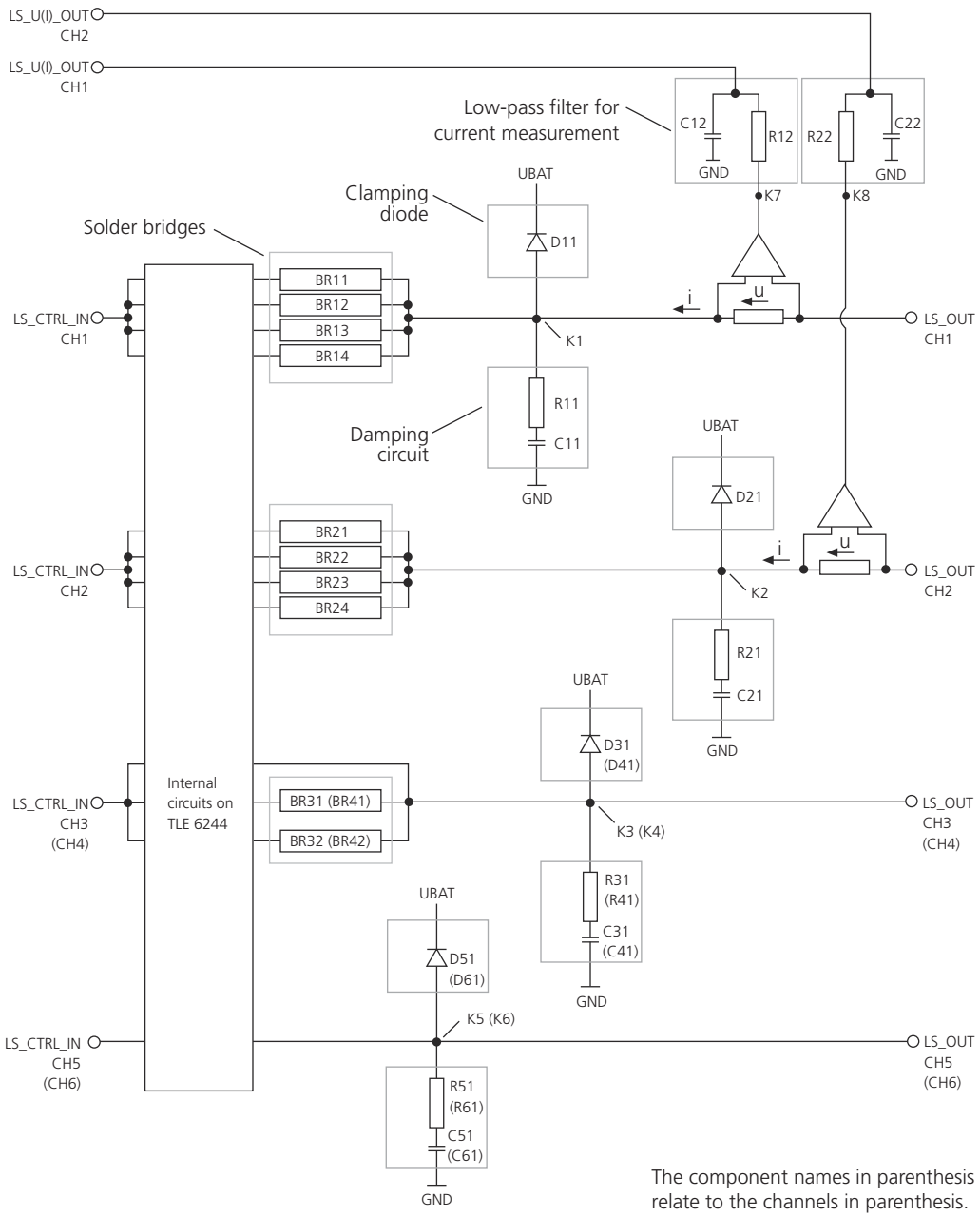
Lets you enter reminder values for parameters which are defined by soldering electronic components to the input circuit of a channel.

Parameters of user-configurable circuits can only be changed via the Platform Manager. For further information, refer to How to Change Parameters of User-Configurable Circuits (ConfigurationDesk for RapidPro - Guide 🕮).

You can edit only numeric values.

> **Note**
>
> The values entered here are stored on the module's hardware as reminders. They do not affect the channel's behavior.

The following illustration shows the user-configurable circuit of the PS-LSD 6/1 module.



The component names in parenthesis relate to the channels in parenthesis.

External clamping diode Lets you select as reminder if the external clamping diode (*D11*, *D21*, *D31*, *D41*, *D51*, or *D61*) is equipped in the user-configurable output circuit shown above.

Damping resistor Lets you enter the reminder value of the damping resistor (*R11*, *R21*, *R31*, *R41*, *R51*, or *R61*) as shown in the user-configurable circuit above.

Damping capacitor Lets you enter the reminder value of the damping capacitor (*C11*, *C21*, *C31*, *C41*, *C51*, or *C61*) as shown in the user-configurable circuit above.

Low-pass filter frequency (1 Hz … 10000 Hz) – (Only available for channel 1 … 2) Lets you enter the reminder value of the low-pass filter frequency (*R12/C12*, or *R22/C22*) as shown in the user-configurable circuit above.

For more details of the circuit and for configuration examples, refer to Hardware Configuration (RapidPro System Hardware Reference 🕮).

Identification

Displays hardware details for channel identification.

Description Gives a short description of the channel's function.

Default channel name Shows the default name of the channel.

Module Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a module port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To configure and to display properties of a module port belonging to a specific channel of the module.

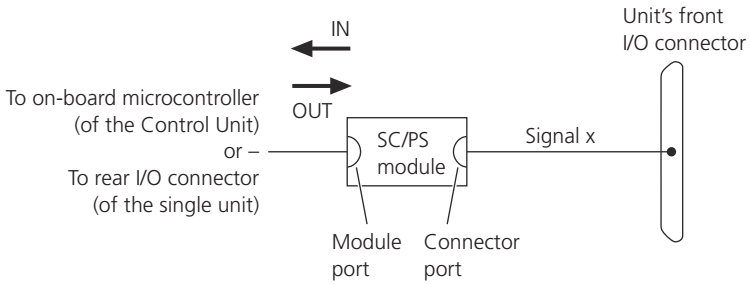
Configuration

Lets you configure settings of the selected module port.

Signal polarity Lets you select the signal polarity of the module's signal.

Identification

Data direction Indicates the data direction of the module port (see illustration below).



Port type Describes the characteristics of the selected port.

Connector Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a connector port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display properties of a connector port belonging to the module or a specific channel.

Identification

Signal description Short description of the function of the port.

PS-DINJ 2/1 Properties

Objective

Various parameters of the PS-DINJ 2/1 module and its channels are configurable. You can also display further module and channel properties, such as identification numbers.

Where to go from here

Information in this section

Module Properties 131
To configure the PS-DINJ 2/1 module, and to display information on it.

Channel Properties 136
To specify properties of a specific channel of the PS-DINJ 2/1 module.

Module Port Properties 138
To display properties of a module port belonging to a specific channel of the module.

Connector Port Properties 139
To display properties of a connector port belonging to the module or a specific channel.

Module Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Hardware Resource Browser – PS-DINJ 2/1 Module (**Properties**) ▪ Platform Manager – PS-DINJ 2/1 Module (**Properties**)
Shortcut key	▪ **Enter** with PS-DINJ 2/1 module selected in the Hardware Resource Browser ▪ **Enter** with PS-DINJ 2/1 module selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the PS-DINJ 2/1 module in the Hardware Resource Browser ▪ Double-click on the PS-DINJ 2/1 module in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To configure the PS-DINJ 2/1 module, and to display information on it.

Configuration

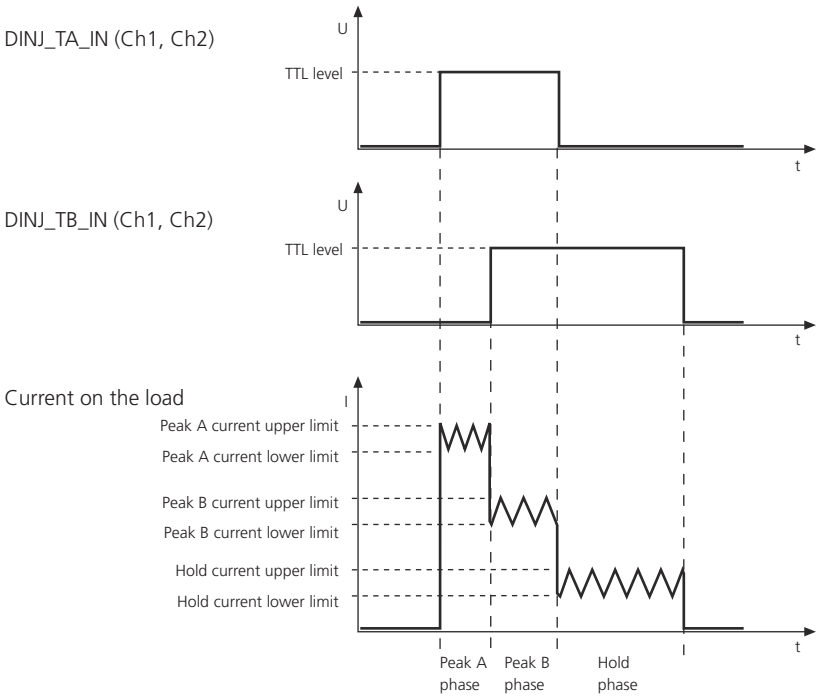
Lets you configure module properties valid for all the channels.

Operation mode Lets you select the operation mode.

- Double control signal mode:

  The load is controlled by the peak A current, peak B current and the hold current. You need both input signals (DINJ_TA_IN and DINJ_TB_IN) of a channel for this.

  The illustration below shows an example how the input control signals DINJ_TA_IN and DINJ_TB_IN relate to the output signal on a connected injection valve.



Note

Setting in the RPCU_INJ_IGN_TPU_BLx blockset

If you use the RPCU_INJ_IGN_TPU_BLx blockset of the RTI RapidPro Control Unit Blockset you must clear the **Enable gate mode** checkbox to get the full functionality. For further information, refer to Injection Page (RPCU_INJ_IGN_TPU_BLx) (RapidPro System – I/O Subsystem MPC565 RTI Reference 🕮).

Note

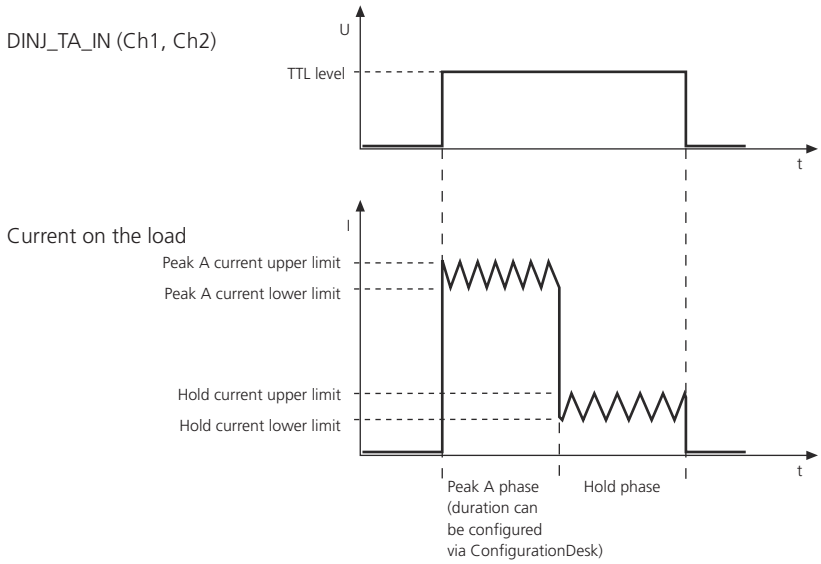
Avoiding negative affects on the output signal's timing accuracy

If you use only one channel of the PS-DINJ 2/1 module you have to note points to avoid negative affects on the output signal's timing accuracy. For further information, refer to Avoiding negative effects on the output signal's timing accuracy (RapidPro System Hardware Reference 🕮).

- Single control signal mode:

  The load is controlled by the peak A current and the hold current. The signal on the load is determined by the length of the input signal (DINJ_TA_IN pin) and the *Peak A duration* value (see Peak A duration (0.00000 … 16.00000 ms) on page 138). The input DINJ_TB_IN does not affect the load signal.

  The illustration below shows an example how the input control signal DINJ_TA_IN relates to the output signal on a connected injection valve.



Note

Avoiding negative affects on the output signal's timing accuracy

If you use only one channel of the PS-DINJ 2/1 module you have to note points to avoid negative affects on the output signal's timing accuracy. For further information, refer to Avoiding negative effects on the output signal's timing accuracy (RapidPro System Hardware Reference 🕮).

Boost voltage (UBAT … 100 V) Lets you specify the voltage of the PS-DINJ 2/1 module's internal booster.

Note

- The lowest boost voltage is never below UBAT – 1 V, even if you set a lower value.
- If you connect an external booster via the DINJ_UBOOST_EXT pins, you have to set the maximum boost voltage parameter to the lowest level (6 V). This is to avoid damage to the module and the external booster.

⚠ WARNING

Hazardous voltages! The PS-DINJ 2/1 module (DS1664) generates output voltages up to 100 V.

Risk of electric shock

- Do not touch the connector pins of the RapidPro Power Unit or any connected terminals and devices while the system is powered.
- Do not power the RapidPro system, if the cover of the housing has been removed.
- After the RapidPro system is powered down, wait at least 3 minutes for the internal voltage to dissipate, before connecting/disconnecting devices or doing any installation work.

Timeout peak (0 s … 0.4 s) Lets you specify a timer value for timeout supervision of the complete peak phases: peak A and peak B. The timer starts with the beginning of the peak A phase. If the peak phase (peak A plus peak B) is still active when the timer expires, a diagnostic message is generated and the module is set to shutdown mode (refer to Diagnostics (RapidPro System Hardware Reference 🕮)). The timer value can be set with a resolution of 100 µs. (This parameter is only available in **Double control signal mode**.)

Timeout hold (0 s … 0.4 s) Lets you specify a timer value for timeout supervision of the hold phase. The timer starts with the beginning of the hold phase. If the hold phase is still active when the timer expires, a diagnostic message is generated and the module is set to shutdown mode (refer to

Diagnostics (RapidPro System Hardware Reference 🕮)). The timer value can be set with a resolution of 100 µs.

Booster mode Lets you select the booster mode. Select the booster mode according to the way you use the module.

Setting	Description
Internal booster	The boost voltage is generated by the internal booster. The DINJ_UBOOST_EXT pins are internally disconnected. They do not carry any voltage.
Internal booster with external capacitor	The boost voltage is generated by the internal booster. The DINJ_UBOOST_EXT pins are internally connected to feed an external booster capacitor.
External booster	The boost voltage is generated by an external connected voltage supply. The DINJ_UBOOST_EXT pins are internally connected and the internal booster is switched off.

Note

Regardless of whether the Booster mode is set, an external boost voltage is fed to the PS-DINJ 2/1 module if the voltage is higher than the specified internal boost voltage.

System monitoring

Lets you show monitored system values of the module.

Temperature sensor T1, T2 Displays temperatures measured on the module's circuit board. The monitored temperatures are for troubleshooting purposes only.

Identification

Displays hardware details for module identification.

Parameter	Description
Module category	"PS" – power stage (for example, PS-FBD 2/1)
Module type	dSPACE module type designation
Module variant	Variant identification of the module
dSPACE number	Number of the module type. The dSPACE number is also printed on the circuit board.
Serial number	Unique identification number of the module. The serial number is also printed on an adhesive label on a module connector.
Module channels	Number of channels provided by the module.
Slot number(s)	Indicates the slot numbers of the adjacent slots on the carrier board of the unit where the module is installed.

Versions

Displays version information of hardware and software components.

Parameter		Description
Plug-in version		Indicates the plug-in software version.
Module hardware version		Indicates the revision number of the module. The syntax of the revision number as displayed in ConfigurationDesk for RapidPro is "<major revision>.<minor revision>". For example, "4.2" denotes major revision 4, minor revision 2. The major revision number is also printed on the circuit board. It is added to the dSPACE number. Example: DS1621-04, where "04" indicates the major revision.
PIC	PIC boot firmware version	The PIC boot firmware makes it possible to update the PIC firmware.
	PIC firmware version	The PIC firmware provides the basic functionality for communication between the module and the unit.
PLD firmware version		Indicates the firmware version number of the firmware used on the module's PLD (programmable logic device).

Channel Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Channel List – PS-DINJ 2/1 Channel (**Properties**) ▪ Platform Manager – PS-DINJ 2/1 Channel (**Properties**)
Shortcut key	▪ **Enter** with PS-DINJ 2/1 channel selected in the Channel List ▪ **Enter** with PS-DINJ 2/1 channel selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the PS-DINJ 2/1 channel in the Channel List ▪ Double-click on the PS-DINJ 2/1 channel in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To specify properties of a specific channel of the PS-DINJ 2/1 module.

Configuration

Lets you configure settings of the selected channel.

Note

In module setup mode, the changes are downloaded to the hardware as soon as you click OK or Apply. They affect the channel's behavior immediately.

Channel name Displays the name of the channel, which you can rename. You can give it a new name with a maximum of 20 characters.

Channels can only be renamed via the Hardware Resource Browser or the Channel List. For further information, refer to How to Change a Channel Name (ConfigurationDesk for RapidPro - Guide 🕮).

Enable diagnostic warnings Lets you enable/disable diagnostic function of the module.

You can enable diagnostic function so that warnings are displayed in ConfigurationDesk's Platform Manager as well as diagnostic errors (see How to Enable/Disable the Display of Diagnostic Warnings (ConfigurationDesk for RapidPro - Guide 🕮)).

Note

To suppress the diagnostic warning "Open load or current pulse too short you must disable the setting Enable diagnostic warnings for both channels.

Peak A current upper limit (2 A ... 30 A) Lets you specify the upper threshold of the load current's peak A phase.

Peak A current lower limit (2 A ... 30 A) Lets you specify the lower threshold of the load current's peak A phase.

Peak B current upper limit (2 A ... 30 A) Lets you specify the upper threshold of the load current's peak B phase. (Only available in Double control signal mode.)

Peak B current lower limit (2 A … 30 A) Lets you specify the lower threshold of the load current's peak B phase. (Only available in **Double control signal mode**.)

Hold current upper limit (2 A … 30 A) Lets you specify the upper threshold of the load current's hold phase.

Hold current lower limit (2 A … 30 A) Lets you specify the lower threshold of the load current's hold phase.

Note

Ripple on the load current

The generated ripple can slightly differ from your settings. The difference mainly depends on the slew rate of the load current that is caused, for example, by the load's inductance, the boost voltage, and the supply voltage (UBAT).

Peak A duration (0.00000 … 16.00000 ms) Lets you specify the duration of the load current's peak A phase. (Only available in **Single control signal mode**.) The parameter is stored with a resolution of 250 ns.

Identification

Displays hardware details for channel identification.

Description Gives a short description of the channel's function.

Default channel name Shows the default name of the channel.

Module Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a module port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

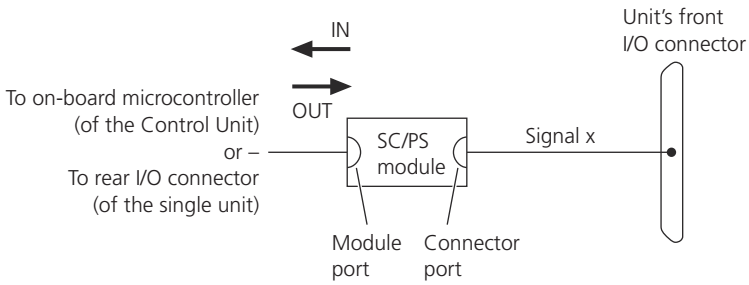
- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display properties of a module port belonging to a specific channel of the module.

Identification

Data direction Indicates the data direction of the module port (see illustration below).



Port type Describes the characteristics of the selected port.

Connector Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a connector port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display properties of a connector port belonging to the module or a specific channel.

Identification

Signal description Short description of the function of the port.

PS-HCFBD 1/1 Properties

Objective

Various parameters of the PS-HCFBD 1/1 module and its channel are configurable. You can also display further module and channel properties, such as identification numbers.

Where to go from here

Information in this section

Module Properties 141
To configure the PS-HCFBD 1/1 module, and to display information on it.

Channel Properties 143
To specify properties of a specific channel of the PS-HCFBD 1/1 module.

Module Port Properties 146
To configure and to display properties of a module port belonging to a specific channel of the module.

Connector Port Properties 147
To display properties of a connector port belonging to the module or a specific channel.

Module Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Hardware Resource Browser – PS-HCFBD 1/1 Module (**Properties**) ▪ Platform Manager – PS-HCFBD 1/1 Module (**Properties**)
Shortcut key	▪ **Enter** with PS-HCFBD 1/1 module selected in the Hardware Resource Browser ▪ **Enter** with PS-HCFBD 1/1 module selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the PS-HCFBD 1/1 module in the Hardware Resource Browser ▪ Double-click on the PS-HCFBD 1/1 module in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To configure the PS-HCFBD 1/1 module, and to display information on it.

Configuration

Lets you configure module properties valid for all the channels.

Output voltage range Lets you define the output voltage range of the current measurement device. (Only adjustable if the module is installed in a Power Unit that is used as single unit.)

System monitoring

Lets you show monitored system values of the module.

Temperature sensor T1, T2 Displays temperatures measured on the module's circuit board. The monitored temperatures are for troubleshooting purposes only.

The temperature sensors are located near the output driver stages of each half-bridge. For further information, refer to Monitoring (RapidPro System Hardware Reference 🕮).

Identification

Displays hardware details for module identification.

Parameter	Description
Module category	"PS" – power stage (for example, PS-FBD 2/1)
Module type	dSPACE module type designation
Module variant	Variant identification of the module
dSPACE number	Number of the module type. The dSPACE number is also printed on the circuit board.
Serial number	Unique identification number of the module. The serial number is also printed on an adhesive label on a module connector.
Module channels	Number of channels provided by the module.
Slot number(s)	Indicates the slot numbers of the adjacent slots on the carrier board of the unit where the module is installed.

Versions

Displays version information of hardware and software components.

Parameter		Description
Plug-in version		Indicates the plug-in software version.
Module hardware version		Indicates the revision number of the module. The syntax of the revision number as displayed in ConfigurationDesk for RapidPro is "<major revision>.<minor revision>". For example, "4.2" denotes major revision 4, minor revision 2. The major revision number is also printed on the circuit board. It is added to the dSPACE number. Example: DS1621-04, where "04" indicates the major revision.
PIC	PIC boot firmware version	The PIC boot firmware makes it possible to update the PIC firmware.
	PIC firmware version	The PIC firmware provides the basic functionality for communication between the module and the unit.
PLD		The programmable logic device (PLD) is used to support the hardware configuration of the module.

Channel Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Channel List – PS-HCFBD 1/1 Channel (**Properties**) ▪ Platform Manager – PS-HCFBD 1/1 Channel (**Properties**)
Shortcut key	▪ **Enter** with PS-HCFBD 1/1 channel selected in the Channel List ▪ **Enter** with PS-HCFBD 1/1 channel selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the PS-HCFBD 1/1 channel in the Channel List ▪ Double-click on the PS-HCFBD 1/1 channel in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To specify properties of a specific channel of the PS-HCFBD 1/1 module.

Configuration

Lets you configure settings of the selected channel.

Note

In module setup mode, the changes are downloaded to the hardware as soon as you click OK or Apply. They affect the channel's behavior immediately.

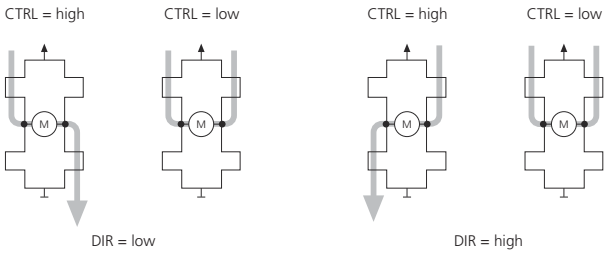
Channel name Displays the name of the channel, which you can rename. You can give it a new name with a maximum of 20 characters.

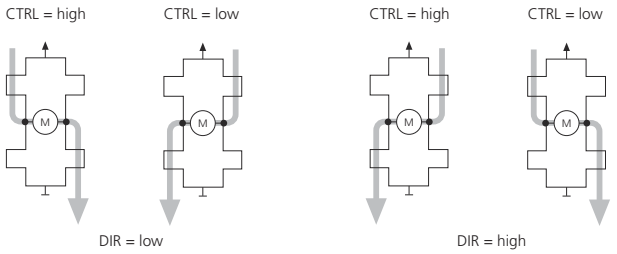
Channels can only be renamed via the Hardware Resource Browser or the Channel List. For further information, refer to How to Change a Channel Name (ConfigurationDesk for RapidPro - Guide 🕮).

Enable diagnostic warnings Lets you enable/disable diagnostic function of the module.

You can enable diagnostic function so that warnings are displayed in ConfigurationDesk's Platform Manager as well as diagnostic errors (see How to Enable/Disable the Display of Diagnostic Warnings (ConfigurationDesk for RapidPro - Guide 🕮)).

Operating mode Lets you select the operating mode.

Setting	Description	Switching Status of the Power Stages
Slow decay	The supply voltage (UBAT) and a short circuit is generated alternately for the load.	

Setting	Description	Switching Status of the Power Stages
Fast decay	An alternating voltage is generated for the load.	

⚠ WARNING

Choosing the fast-decay mode can cause uncontrolled movements and/or material damage of connected devices.

In fast-decay mode, both input signals (HCFB_DIR_IN and HCFB_CTRL_IN) are set to low level if you build a Simulink model without connecting PWM signals to the full-bridge. This means that a connected motor starts if you download your application and no PWM signals are connected to the module inputs. If you invert the polarity of the signals via ConfigurationDesk for RapidPro, high-level signals trigger the described behavior.

To avoid risk of injury and material damage:

- When building the Simulink model, think through the effects of the connections you are planning and the settings of the modules.
- Ensure that no one is in the potential danger zone of the device (test bench, etc.) when the changes first take effect.

User-configurable circuit

Lets you enter reminder values for parameters which are defined by soldering electronic components to the input circuit of a channel.

Parameters of user-configurable circuits can only be changed via the Platform Manager. For further information, refer to How to Change Parameters of User-Configurable Circuits (ConfigurationDesk for RapidPro - Guide 🕮).

You can edit only numeric values.

Note

The values entered here are stored on the module's hardware as reminders. They do not affect the channel's behavior.

Maximum output current (0.0 A … 60.0 A) Displays the maximum output current of the module (no changes possible).

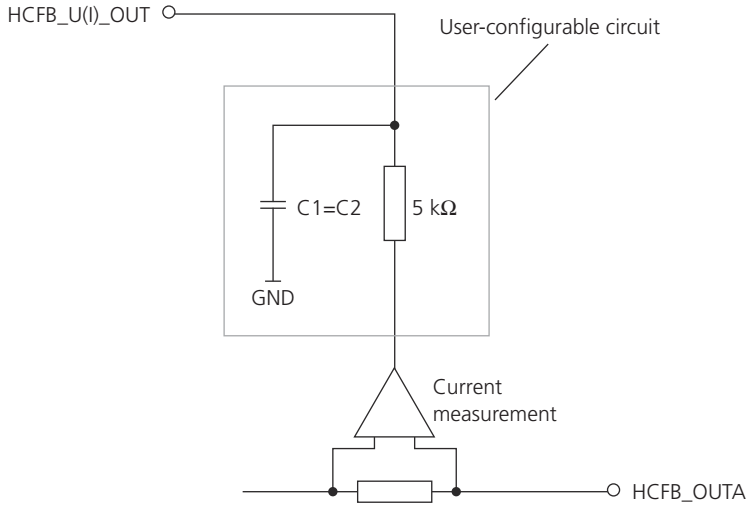
The maximum output current of the PS-HCFBD 1/1 module affects the scaling of the current measurement (HCFB_U(I)_OUT). For details, refer to Module Components and Functionality (RapidPro System Hardware Reference 🕮).

Note

You have to specify the output current in your order. If you do not, the module is set to a maximum output current of 60 A.
The module has to be modified by dSPACE to change the setting.

Low-pass filter frequency (100 Hz ... 10000 Hz) Lets you enter the reminder value of the low-pass filter frequency (RC-network of R = 5 kΩ and the capacitors X1, X2) as shown in the user-configurable circuit below.

The following illustration shows the simplified circuit of the low-pass filter in the current measurement branch.



For more details of the circuit and for configuration examples, refer to Hardware Configuration (RapidPro System Hardware Reference 🕮).

Identification

Displays hardware details for channel identification.

Description Gives a short description of the channel's function.

Default channel name Shows the default name of the channel.

Module Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None

Mouse	In the hardware tree of the properties dialog, select a module port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To configure and to display properties of a module port belonging to a specific channel of the module.

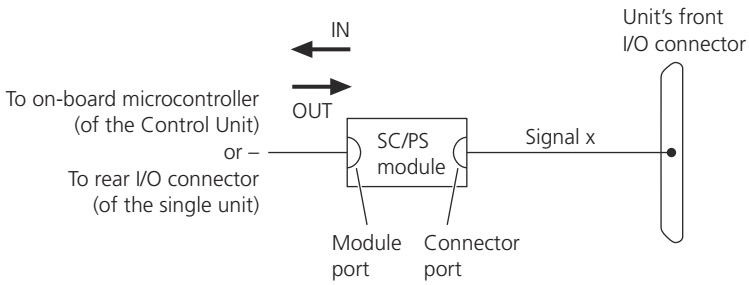
Configuration

Lets you configure settings of the selected module port.

Signal polarity Lets you select the signal polarity of the module's signal.

Identification

Data direction Indicates the data direction of the module port (see illustration below).



Port type Describes the characteristics of the selected port.

Connector Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None

Mouse	In the hardware tree of the properties dialog, select a connector port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display properties of a connector port belonging to the module or a specific channel.

Identification

Signal description Short description of the function of the port.

PS-HCHBD 2/1 Properties

Objective

Various parameters of the PS-HCHBD 2/1 module and its channels are configurable. You can also display further module and channel properties, such as identification numbers.

Where to go from here

Information in this section

Module Properties 149
To configure the PS-HCHBD 2/1 module, and to display information on it.

Channel Properties 151
To specify properties of a specific channel of the PS-HCHBD 2/1 module.

Module Port Properties 154
To configure and to display properties of a module port belonging to a specific channel of the module.

Connector Port Properties 155
To display properties of a connector port belonging to the module or a specific channel.

Module Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Hardware Resource Browser – PS-HCHBD 2/1 Module (**Properties**) ▪ Platform Manager – PS-HCHBD 2/1 Module (**Properties**)
Shortcut key	▪ **Enter** with PS-HCHBD 2/1 module selected in the Hardware Resource Browser ▪ **Enter** with PS-HCHBD 2/1 module selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the PS-HCHBD 2/1 module in the Hardware Resource Browser ▪ Double-click on the PS-HCHBD 2/1 module in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To configure the PS-HCHBD 2/1 module, and to display information on it.

Configuration

Lets you configure module properties valid for all the channels.

Output voltage range Lets you define the voltage output range of the current measurement devices. (Only adjustable if the module is installed in a Power Unit that is used as single unit.)

System monitoring

Lets you show monitored system values of the module.

Temperature sensor T1, T2 Displays temperatures measured on the module's circuit board. The monitored temperatures are for troubleshooting purposes only.

The temperature sensors are located near the output driver stages of each half-bridge.

- T1 is assigned to channel 1
- T2 is assigned to channel 2

Identification

Displays hardware details for module identification.

Parameter	Description
Module category	"PS" – power stage (for example, PS-FBD 2/1)
Module type	dSPACE module type designation
Module variant	Variant identification of the module
dSPACE number	Number of the module type. The dSPACE number is also printed on the circuit board.
Serial number	Unique identification number of the module. The serial number is also printed on an adhesive label on a module connector.
Module channels	Number of channels provided by the module.
Slot number(s)	Indicates the slot numbers of the adjacent slots on the carrier board of the unit where the module is installed.

Versions

Displays version information of hardware and software components.

Parameter		Description
Plug-in version		Indicates the plug-in software version.
Module hardware version		Indicates the revision number of the module. The syntax of the revision number as displayed in ConfigurationDesk for RapidPro is "<major revision>.<minor revision>". For example, "4.2" denotes major revision 4, minor revision 2. The major revision number is also printed on the circuit board. It is added to the dSPACE number. Example: DS1621-04, where "04" indicates the major revision.
PIC	PIC boot firmware version	The PIC boot firmware makes it possible to update the PIC firmware.
	PIC firmware version	The PIC firmware provides the basic functionality for communication between the module and the unit.
PLD		The programmable logic device (PLD) is used to support the hardware configuration of the module.

Channel Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Channel List – PS-HCHBD 2/1 Channel (**Properties**) ▪ Platform Manager – PS-HCHBD 2/1 Channel (**Properties**)
Shortcut key	▪ **Enter** with PS-HCHBD 2/1 channel selected in the Channel List ▪ **Enter** with PS-HCHBD 2/1 channel selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the PS-HCHBD 2/1 channel in the Channel List ▪ Double-click on the PS-HCHBD 2/1 channel in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To specify properties of a specific channel of the PS-HCHBD 2/1 module.

Configuration

Lets you configure settings of the selected channel.

Note

In module setup mode, the changes are downloaded to the hardware as soon as you click OK or Apply. They affect the channel's behavior immediately.

Channel name Displays the name of the channel, which you can rename. You can give it a new name with a maximum of 20 characters.

Channels can only be renamed via the Hardware Resource Browser or the Channel List. For further information, refer to How to Change a Channel Name (ConfigurationDesk for RapidPro - Guide 🕮).

Enable diagnostic warnings Lets you enable/disable diagnostic function of the module.

You can enable diagnostic function so that warnings are displayed in ConfigurationDesk's Platform Manager as well as diagnostic errors (see How to Enable/Disable the Display of Diagnostic Warnings (ConfigurationDesk for RapidPro - Guide 🕮)).

Output driver mode Lets you select the module's output driver mode.

Setting	Description
Half-bridge	In half-bridge operating mode the input signal switches the connected load from UBAT to GND and vice versa.
Low-side	In low-side operating mode you can drive a load that is connected to UBAT.
High-side	In high-side operating mode you can drive a load that is connected to GND.

User-configurable circuit

Lets you enter reminder values for parameters which are defined by soldering electronic components to the input circuit of a channel.

Parameters of user-configurable circuits can only be changed via the Platform Manager. For further information, refer to How to Change Parameters of User-Configurable Circuits (ConfigurationDesk for RapidPro - Guide 🕮).

You can edit only numeric values.

Note

The values entered here are stored on the module's hardware as reminders. They do not affect the channel's behavior.

Maximum output current (0.0 A … 60.0 A) Displays the maximum output current of the module (no changes possible).

The maximum output current of the PS-HCFBD 1/1 module affects the scaling of the current measurement (HCFB_U(I)_OUT). For details, refer to Module Components and Functionality (RapidPro System Hardware Reference 🕮).

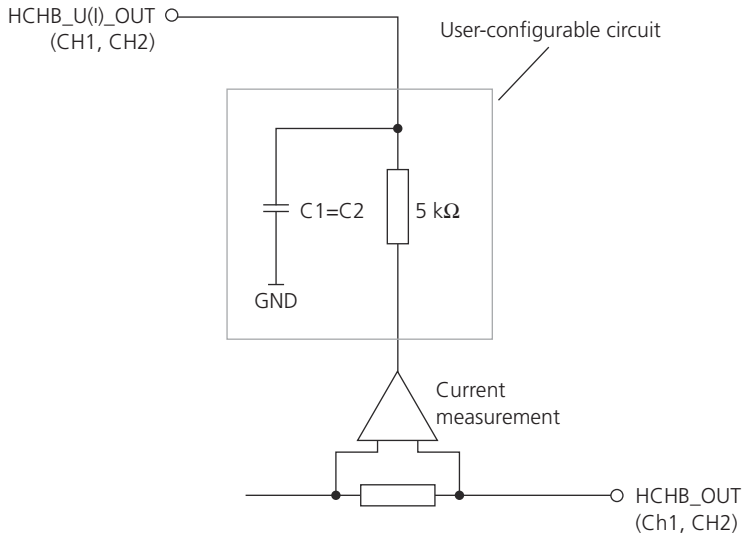
Note

You have to specify the output current in your order. If you do not, the module is set to a maximum output current of 60 A.

The module has to be modified by dSPACE to change the setting.

Low-pass filter frequency (100 Hz … 10000 Hz) Lets you enter the reminder value of the low-pass filter frequency (RC-network of R = 5 kΩ and the capacitors X1, X2) as shown in the user-configurable circuit below.

The following illustration shows the simplified circuit of the low-pass filter in the current measurement branch.



For more details of the circuit and for configuration examples, refer to Hardware Configuration (RapidPro System Hardware Reference 🕮).

Identification

Displays hardware details for channel identification.

Description Gives a short description of the channel's function.

Default channel name Shows the default name of the channel.

Module Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a module port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To configure and to display properties of a module port belonging to a specific channel of the module.

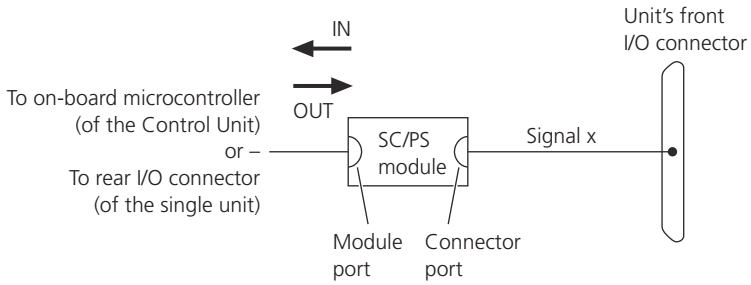
Configuration

Lets you configure settings of the selected module port.

Signal polarity Lets you select the signal polarity of the module's signal.

Identification

Data direction Indicates the data direction of the module port (see illustration below).



Port type Describes the characteristics of the selected port.

Connector Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a connector port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display properties of a connector port belonging to the module or a specific channel.

Identification

Signal description Short description of the function of the port.

PS-HCFBD 1/2 Properties

Objective

Various parameters of the PS-HCFBD 1/2 module and its channel are configurable. You can also display further module and channel properties, such as identification numbers.

Where to go from here

Information in this section

Module Properties 156
To configure the PS-HCFBD 1/2 module, and to display information on it.

Channel Properties 159
To specify properties of a specific channel of the PS-HCFBD 1/2 module.

Module Port Properties 161
To configure and to display properties of a module port belonging to a specific channel of the module.

Connector Port Properties 162
To display properties of a connector port belonging to the module or a specific channel.

Module Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Hardware Resource Browser – PS-HCFBD 1/2 Module (**Properties**) ▪ Platform Manager – PS-HCFBD 1/2 Module (**Properties**)
Shortcut key	▪ **Enter** with PS-HCFBD 1/2 module selected in the Hardware Resource Browser ▪ **Enter** with PS-HCFBD 1/2 module selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the PS-HCFBD 1/2 module in the Hardware Resource Browser ▪ Double-click on the PS-HCFBD 1/2 module in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

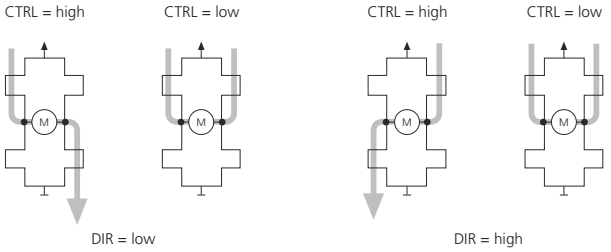
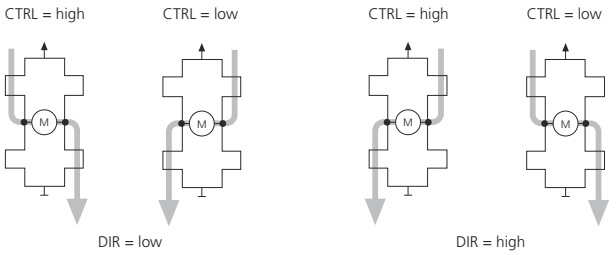
Purpose

To configure the PS-HCFBD 1/2 module, and to display information on it.

Configuration

Lets you configure module properties.

Operating mode Lets you select the operating mode.

Setting	Description	Switching Status of the Power Stages
Slow decay	The supply voltage (UBAT) and a short circuit is generated alternately for the load.	
Fast decay	An alternating voltage is generated for the load.	

⚠ WARNING

Choosing the fast-decay mode can cause uncontrolled movements and/or material damage of connected devices.

In fast-decay mode, both input signals (HCFB_DIR_IN and HCFB_CTRL_IN) are set to low level if you build a Simulink model without connecting PWM signals to the full-bridge. This means that a connected motor starts if you download your application and no PWM signals are connected to the module inputs. If you invert the polarity of the signals via ConfigurationDesk for RapidPro, high-level signals trigger the described behavior.

To avoid risk of injury and material damage:

- When building the Simulink model, think through the effects of the connections you are planning and the settings of the modules.
- Ensure that no one is in the potential danger zone of the device (test bench, etc.) when the changes first take effect.

Current limit (5.0 A ... 60.0 A) You can set the maximum possible output current to adapt it to the specifications of your connected load.

Current measurement

Lets you configure the current measurement.

Output voltage range Lets you define the output voltage range of the current measurement device. (Only adjustable if the module is installed in a Power Unit that is used as single unit.)

Enable digital low-pass filter The interaction of the filter's hardware and software components provides the best possible filter characteristics but can restrict the maximum possible bandwidth. Therefore you can disable the software component of the filter to use the maximum possible bandwidth of the filter.

Digital low-pass filter frequency (100 Hz ... 150000 Hz) You can set the cutoff frequency of the digital low-pass filter that is part of the module's current measurement branch.

Digital low-pass filter order You can set the order of the digital low-pass filter that is part of the module's current measurement branch.

System monitoring

Lets you show monitored system values of the module.

Temperature sensor T1, T2 Displays temperatures measured on the module's circuit board. The monitored temperatures are for troubleshooting purposes only.

The temperature sensors are located near the output driver stages of each half-bridge. For further information, refer to Monitoring (RapidPro System Hardware Reference 🕮).

Identification

Displays hardware details for module identification.

Parameter	Description
Module category	"PS" – power stage (for example, PS-FBD 2/1)
Module type	dSPACE module type designation
Module variant	Variant identification of the module
dSPACE number	Number of the module type. The dSPACE number is also printed on the circuit board.
Serial number	Unique identification number of the module. The serial number is also printed on an adhesive label on a module connector.
Module channels	Number of channels provided by the module.
Slot number(s)	Indicates the slot numbers of the adjacent slots on the carrier board of the unit where the module is installed.

Versions

Displays version information of hardware and software components.

Parameter		Description
Plug-in version		Indicates the plug-in software version.
Module hardware version		Indicates the revision number of the module. The syntax of the revision number as displayed in ConfigurationDesk for RapidPro is "<major revision>.<minor revision>". For example, "4.2" denotes major revision 4, minor revision 2. The major revision number is also printed on the circuit board. It is added to the dSPACE number. Example: DS1621-04, where "04" indicates the major revision.
PIC	PIC boot firmware version	The PIC boot firmware makes it possible to update the PIC firmware.
	PIC firmware version	The PIC firmware provides the basic functionality for communication between the module and the unit.
PLD firmware version		The programmable logic device (PLD) is used to support the hardware configuration of the module.

Channel Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Channel List – PS-HCFBD 1/2 Channel (**Properties**)

	▪ Platform Manager – PS-HCFBD 1/2 Channel (**Properties**)
Shortcut key	▪ **Enter** with PS-HCFBD 1/2 channel selected in the Channel List ▪ **Enter** with PS-HCFBD 1/2 channel selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the PS-HCFBD 1/2 channel in the Channel List ▪ Double-click on the PS-HCFBD 1/2 channel in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To specify properties of a specific channel of the PS-HCFBD 1/2 module.

Configuration

Lets you configure settings of the selected channel.

Note

In module setup mode, the changes are downloaded to the hardware as soon as you click **OK** or **Apply**. They affect the channel's behavior immediately.

Channel name Displays the name of the channel, which you can rename. You can give it a new name with a maximum of 20 characters.

Channels can only be renamed via the Hardware Resource Browser or the Channel List. For further information, refer to How to Change a Channel Name (ConfigurationDesk for RapidPro - Guide 🕮).

Enable diagnostic warnings Lets you enable/disable diagnostic function of the module.

You can enable diagnostic function so that warnings are displayed in ConfigurationDesk's Platform Manager as well as diagnostic errors (see How to Enable/Disable the Display of Diagnostic Warnings (ConfigurationDesk for RapidPro - Guide 🕮)).

Identification

Displays hardware details for channel identification.

Description Gives a short description of the channel's function.

Default channel name Shows the default name of the channel.

Module Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a module port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To configure and to display properties of a module port belonging to a specific channel of the module.

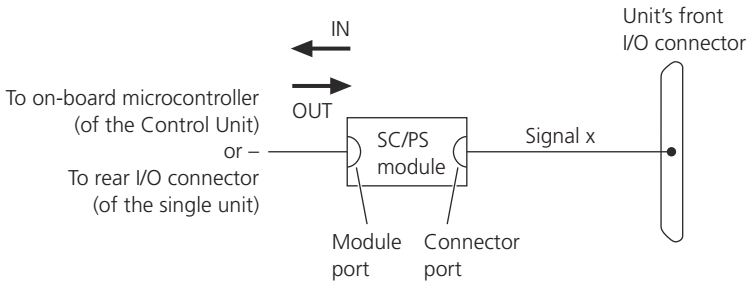
Configuration

Lets you configure settings of the selected module port.

Signal polarity Lets you select the signal polarity of the module's signal.

Identification

Data direction Indicates the data direction of the module port (see illustration below).



Port type Describes the characteristics of the selected port.

Connector Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a connector port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display properties of a connector port belonging to the module or a specific channel.

Identification

Signal description Short description of the function of the port.

PS-HCHBD 2/2 Properties

Objective

Various parameters of the PS-HCHBD 2/2 module and its channels are configurable. You can also display further module and channel properties, such as identification numbers.

Where to go from here

Information in this section

Module Properties 163
To configure the PS-HCHBD 2/2 module, and to display information on it.

Channel Properties 166
To specify properties of a specific channel of the PS-HCHBD 2/2 module.

Module Port Properties 168
To configure and to display properties of a module port belonging to a specific channel of the module.

Connector Port Properties 170
To display properties of a connector port belonging to the module or a specific channel.

Module Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Hardware Resource Browser – PS-HCHBD 2/2 Module (**Properties**) ▪ Platform Manager – PS-HCHBD 2/2 Module (**Properties**)
Shortcut key	▪ **Enter** with PS-HCHBD 2/2 module selected in the Hardware Resource Browser ▪ **Enter** with PS-HCHBD 2/2 module selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the PS-HCHBD 2/2 module in the Hardware Resource Browser ▪ Double-click on the PS-HCHBD 2/2 module in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To configure the PS-HCHBD 2/2 module, and to display information on it.

Configuration

Lets you configure module properties valid for all the channels.

Operation mode Lets you select the operation mode.

Operation Mode	Description
General purpose, single channel	Only channel 1 is available. The second channel is deactivated to provide a maximum output current of up to 60 A on the first channel. You can configure different output driver modes for this operation mode (see Channel Properties on page 166).
General purpose, double channel	You can configure the two channels of the module separately and use them with different output driver modes (see Channel Properties on page 166). The maximum output current is 30 A for each channel.
Electric drive, two half bridges	Both operation modes are for driving three-phase electrical motors. Two PS-HCHBD 2/2 modules are required in one Power Unit in this use scenario. One module must be set to *Electric drive, two half bridges* mode, the other to *Electric drive, half bridge and brake chopper* mode. Three channels of the modules are used to drive the three phases of the motor. The second channel of the module in *Electric drive, half bridge and brake chopper* mode is used as a brake chopper to control the voltage rise on Ubat induced by the motor if it works as a generator.
Electric drive, half bridge and brake chopper	

Output voltage range Lets you define the output voltage range of the current measurement device. (Only adjustable if the module is installed in a Power Unit that is used as single unit.)

System monitoring

Lets you show monitored system values of the module.

Temperature sensor T1, T2 Displays temperatures measured on the module's circuit board. The monitored temperatures are for troubleshooting purposes only.

The temperature sensors are located near the output driver stages of each half-bridge. For further information, refer to Monitoring (RapidPro System Hardware Reference 🕮).

Identification

Displays hardware details for module identification.

Parameter	Description
Module category	"PS" – power stage (for example, PS-FBD 2/1)
Module type	dSPACE module type designation
Module variant	Variant identification of the module
dSPACE number	Number of the module type. The dSPACE number is also printed on the circuit board.
Serial number	Unique identification number of the module. The serial number is also printed on an adhesive label on a module connector.
Module channels	Number of channels provided by the module.
Slot number(s)	Indicates the slot numbers of the adjacent slots on the carrier board of the unit where the module is installed.

Versions

Displays version information of hardware and software components.

Parameter		Description
Plug-in version		Indicates the plug-in software version.
Module hardware version		Indicates the revision number of the module. The syntax of the revision number as displayed in ConfigurationDesk for RapidPro is "<major revision>.<minor revision>". For example, "4.2" denotes major revision 4, minor revision 2. The major revision number is also printed on the circuit board. It is added to the dSPACE number. Example: DS1621-04, where "04" indicates the major revision.
PIC	PIC boot firmware version	The PIC boot firmware makes it possible to update the PIC firmware.
	PIC firmware version	The PIC firmware provides the basic functionality for communication between the module and the unit.
PLD firmware version		The programmable logic device (PLD) is used to support the hardware configuration of the module.

Channel Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	▪ Channel List – PS-HCHBD 2/2 Channel (**Properties**) ▪ Platform Manager – PS-HCHBD 2/2 Channel (**Properties**)
Shortcut key	▪ **Enter** with PS-HCHBD 2/2 channel selected in the Channel List ▪ **Enter** with PS-HCHBD 2/2 channel selected in the Platform Manager
Toolbar icon	None
Mouse	▪ Double-click on the PS-HCHBD 2/2 channel in the Channel List ▪ Double-click on the PS-HCHBD 2/2 channel in the Platform Manager

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To specify properties of a specific channel of the PS-HCHBD 2/2 module.

Configuration

Lets you configure settings of the selected channel.

Note

In module setup mode, the changes are downloaded to the hardware as soon as you click OK or Apply. They affect the channel's behavior immediately.

Channel name Displays the name of the channel, which you can rename. You can give it a new name with a maximum of 20 characters.

Channels can only be renamed via the Hardware Resource Browser or the Channel List. For further information, refer to How to Change a Channel Name (ConfigurationDesk for RapidPro - Guide 🕮).

Enable diagnostic warnings Lets you enable/disable diagnostic function of the module.

You can enable diagnostic function so that warnings are displayed in ConfigurationDesk's Platform Manager as well as diagnostic errors (see How to Enable/Disable the Display of Diagnostic Warnings (ConfigurationDesk for RapidPro - Guide 🕮)).

Output driver mode Lets you select the output driver mode.

Output Driver Mode	Description
Half-bridge	In half-bridge output driver mode, the input signal switches the connected load from UBAT to GND and vice versa.
Low-side	In low-side output driver mode, you can drive a load that is connected to UBAT.
High-side	In high-side output driver mode, you can drive a load that is connected to GND.

Note

Output driver mode is not selectable in Electric drive, two half bridges and Electric drive, half bridge and brake chopper mode.

Current limit (5.0 A ... x0.0 A) You can set the maximum possible output current to adapt it to the specifications of your connected load.

The range of this parameter depends on the currently selected operation mode:

- General purpose, double channel = 5.0 A … 30.0 A
- General purpose, single channel = 5.0 A … 60.0 A
- Electric drive, two half bridges = 5.0 A … 60.0 A
- Electric drive, half bridge and brake chopper = 5.0 A … 60.0 A

Automatic brake chopper

Lets you configure the automatic brake chopper. (Only adjustable for the second channel if the Operation mode is set to Electric drive, half bridge and brake chopper.)

Chopper activation threshold voltage (0.0 V ... 30.0 V) If the input voltage exceeds the threshold, the brake chopper is turned on.

Chopper deactivation threshold voltage (0.0 V ... 30.0 V) If the input voltage falls below the threshold, the brake chopper is turned off.

Note

The value between the activation and deactivation thresholds must be not below 2 V, otherwise an error message will be output.

For a user example, refer to Driving BLDC/BLAC Motors (RapidPro System Hardware Reference 🕮).

Current measurement

Lets you configure the current measurement.

Enable digital low-pass filter The interaction of the filter's hardware and software components provides the best possible filter characteristics, but can restrict the maximum possible bandwidth. You can disable the software component of the filter to use the maximum possible bandwidth of the filter.

Digital low-pass filter frequency (100 Hz ... 150000 Hz) You can set the cutoff frequency of the digital low-pass filter that is part of the module's current measurement branch.

Digital low-pass filter order You can set the order of the digital low-pass filter that is part of the module's current measurement branch.

Identification

Displays hardware details for channel identification.

Description Gives a short description of the channel's function.

Default channel name Shows the default name of the channel.

Module Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a module port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To configure and to display properties of a module port belonging to a specific channel of the module.

Configuration

Lets you configure settings of the selected module port.

Signal polarity Lets you select the signal polarity of the module's signal.

Note

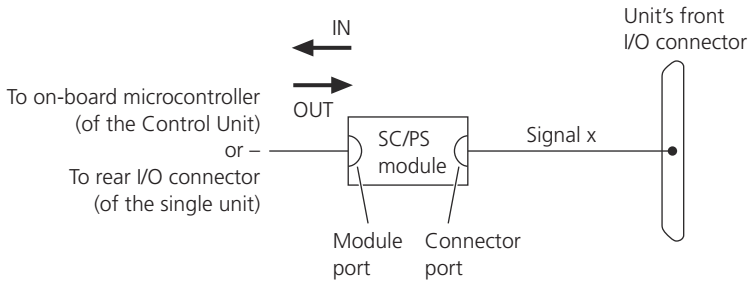
You can configure the signal polarity of the module ports HCHB_CTRL_A and HCHB_CTRL_B even if they have no function in the currently selected operation mode.

Operation Mode	Channel	Valid Module Port
General purpose, single channel	1	HCHB_CTRL_A
General purpose, double channel	1	HCHB_CTRL_A
	2	HCHB_CTRL_A
Electric drive, two half bridges	1	▪ HCHB_CTRL_A ▪ HCHB_CTRL_B
	2	▪ HCHB_CTRL_A ▪ HCHB_CTRL_B
Electric drive, half bridge and brake chopper	1	▪ HCHB_CTRL_A ▪ HCHB_CTRL_B
	2	None

For further information, refer to Operation mode on page 164.

Identification

Data direction Indicates the data direction of the module port (see illustration below).



Port type Describes the characteristics of the selected port.

Connector Port Properties

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Toolbar icon	None
Mouse	In the hardware tree of the properties dialog, select a connector port.

Changing view of parameter display

Tip

You can change the view of the parameter display by clicking the icons in the toolbar of the properties dialog.

- Click  to get a categorized view.
- Click  to get an alphabetical view.

Purpose

To display properties of a connector port belonging to the module or a specific channel.

Identification

Signal description Short description of the function of the port.

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