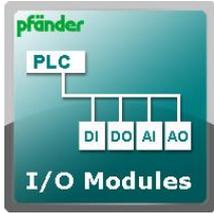


Datasheet Romod I/O Modules SL



This library allows you to use Romod I/O devices from the manufacturer Romutec (www.romutec.de) via RS485 COM-Port on supported CODESYS PLC runtimes. The devices can be easily added to the device tree. The configuration of module specific parameters is done under the device parameters tab, without any programming requirements. All input/output variables can be mapped in the I/O-Mapping section.

Without purchasing a license (just download) Romod I/O Modules SL runs for 30 minutes without functional limitations and disconnects automatically (demo).

Product Description

This library allows you to use the Romod I/O modules 16DI, 8DO, 8DO-R, 4DO-R, 8AI and 8AO with supported CODESYS PLC runtimes. It requires a RS485 COM-Port interface and also a Modbus license (mostly included).

The devices can be added to the device tree and also be extended with various romod modules. Variables can be mapped to the program under the I/O-Mapping Tab.

All output modules are local override/indication devices, the state can be monitored and changed. If the device is local overridden/indicated, then it will be shown under the device tree.

There is also a parameter settings window for each module. Different settings as slave-address, Bus-Timeout, send command or cycle request time can be configured under this section. Many specific I/O extended settings are also available for example: Negation, two-point-function, limiter, damped function etc. The analog input module allows you to select sensors as PT1000/100, Ni 1000, NTC 10k, etc.

The Romod-Master device is required for configuring the physical hardware COM-Port. Common serial settings can be configured there.

The Hardware modules can be decentral installed (for example in electrical distribution boards). Supported bus cable length for the devices is up to 3937 feet (based on the environmental conditions). Each device address is configurable with dip switches. Serial communication settings as baudrate don't need to be configured, because the devices are supporting "Autobauding". This feature is decreasing the fault-rate and also the installation time out of the field.

Please note: The modules don't support real-time requirements.

Range of Functions

General Functions

- Outputs are head on optimized
- Cycle request time settable for each input module
- SafeState: Analog and digital state on bus error (Timeout configurable)
- Module commands can be sent by bus control (for example factory reset).
- Request of romod module ID and module firmware
- Optimized Bus-Watchdog in case of slave interruption

16DI Module

- Each digital input can be negated under the parameter window
- Input detection also on delayed bus request

8DO and 8 DO-R Module

- Each digital output can be negated under the parameter window
- Shows dip switch position: (A)uto (O)ff (O)n

4DO-R Module

- Each digital output can be negated under the parameter window
- Configurable press time for hardware button
- Switching delay between the outputs can be setted
- Shows dip switch position: (A)uto (O)ff (O)n
- Reset automatic mode from bus control
- Manual mode can be disabled

8AI Module

- Input configuration selectable based on sensor/function and deposited curve:
 - 0..10 Volt
 - Widerstand 0..5 kOhm
 - Widerstand 0..10 kOhm
 - PT100/PT1000
 - Ni1000
 - Ni1000 Landis+Gyr
 - KTY 81-110
 - KTY 81-210
 - NTC 20k
 - NTC 10k
- Configurable delta value (request only on change between the delta value)
- Integrated two-point-function
- Offsetvalue (sensor value correction)
- Integreated limiter with min and max area. In case of exceeding/falling below the analog value can be get the value as configured, for example: Input, minimum, maxium, replaced value or last value. Also the error flag will be setted to true.
- Integrated filter with built-in time constant
- In the I/O section the raw value and the processed value is shown.

4AO Module

- Configurable Change-Area
 - Safestate for output value in percentage
 - Shows dip switch position with poti value
-

Screenshots

romod

Hardware I/O Modules



Modules

Add Device

Name: Romod_16DI_Slave_1

Action: Append device Insert device Plug device Update device

Enter a string for a fulltext search in all devices... Vendor: <All vendors>

Name	Vendor	Version	Description
Romod 16DI Slave	Pfaender GmbH	1.1.0.0	Digital input module with 16 single inputs. Manufacturer: Romutec, www.romutec.de
Romod 4DIO-R Slave	Pfaender GmbH	1.1.0.0	Digital relay input/output module with 4 single relay outputs. Manufacturer: Romutec, www.romutec.de
Romod 4DO-R Slave	Pfaender GmbH	1.1.0.0	Digital relay output module with 4 single relay outputs. Manufacturer: Romutec, www.romutec.de
Romod 8AI Slave	Pfaender GmbH	1.1.0.0	Analog input module with 8 single inputs. Manufacturer: Romutec, www.romutec.de
Romod 8AO Slave	Pfaender GmbH	1.1.0.0	analog output module with 8 single outputs. Manufacturer: Romutec, www.romutec.de
Romod 8DO Slave	Pfaender GmbH	1.1.0.0	Digital output module with 8 single outputs. Manufacturer: Romutec, www.romutec.de
Romod 8DO-R Slave	Pfaender GmbH	1.1.0.0	Digital relay output module with 8 single outputs. Manufacturer: Romutec, www.romutec.de

Group by category Display all versions (for experts only) Display outdated versions

Name: Romod 16DI Slave
Vendor: Pfaender GmbH
Categories: Modbus Serial Slave
Version: 1.1.0.0
Order Number: 00002929
Description: Digital input module with 16 single inputs. Manufacturer: Romutec, www.romutec.de



Append selected device as last child of
Romod_Master_Device

(You can select another target node in the navigator while this window is open.)

Parameters e.g. AI

AI input configuration

two-point-function

Offset

Limiter

Damped function

Parameter	Type	Value	Default Value	Unit	Description
slave address	WORD(1..245)	1	1		Slave address for the module (DIP switches).
Bus-timeout	WORD(10..80)	20	20		0 => No Bus-timeout = No SafeState mode.
Module command	Enumeration of WORD	NONE	NONE		Romod specific commands to test or reset the module.
Cyclic polling time	TIME(T#80MS..T#20S)	T#500MS	T#500MS		Cyclic polling time for analog inputs.
AI inputs configuration	ARRAY [1..8] OF stAI8ConfigParameters				Input configuration for each single digital input.
AI inputs configuration[1]					Input configuration for each single digital input.
Function/Sensor	Enumeration of WORD	PT 1000	PT 1000		Sensor type settings.
Delta	REAL	1.0	1.0		Delta value settings. Depending on "Function/Sensor" settings. See documentation.
Two point function					The function describes a linear equation defined by the two points (X1,Y1) and(X2,Y2).
X1	REAL	0	0		x-coordinate of the first value
X2	REAL	100	100		x-coordinate of the second value
Y1	REAL	0	0		y-coordinate of the first value
Y2	REAL	100	100		y-coordinate of the second value
Min ans max limit	BOOL	FALSE	FALSE		TRUE= activate min and max limit function
Min and max offset	DINT	0	0		Offset value for the min and max function in %.
Offset	REAL	0.0	0.0		Offset value (Correction value +/-)
Limit function					Settings for the limit function (Error outputs in I/O Mapping tab)
Activate	BOOL	FALSE	FALSE		TRUE = Limit function activate FALSE = Limit function deactivated
Min value	REAL	-50.0	-50.0		Min value setting (Activate error output below the min value)
Max value	REAL	150.0	150.0		Max value setting (Activate error output if the max limit is exceeded)
In case of limit error	Enumeration of WORD	Replacement va...	Replacement va...		Replacement value setting in case of limit error
Replacement value	REAL	0.0	0.0		Replacement value, when selection "Replacement value" at "In case of limit error" is selected and an limit error is active.
Damped function					Settings for damped values or temperatures
Activate	BOOL	FALSE	FALSE		TRUE = Damped function activated FALSE = Damped function deactivated
Time constant / Time slot	TIME	T#10S	T#10S		Value for the scanning interval

I/O Mapping

Variable	Mapping	Channel	Address	Type	Unit	Description
		Romod module info	%IW0			Shows internal module information.
		xBusyState	%IX4.0	BOOL		It's TRUE when the module is polling data.
xBOOL1		DI16 inputs	%IW3	WORD		DI16 inputs as datatype WORD.
		DI1 input	%IX6.0	BOOL		Test Input XY
		DI2 input	%IX6.1	BOOL		Digital input signal number 2 of DI16.
		DI3 input	%IX6.2	BOOL		Digital input signal number 3 of DI16.
		DI4 input	%IX6.3	BOOL		Digital input signal number 4 of DI16.
		DI5 input	%IX6.4	BOOL		Digital input signal number 5 of DI16.
		DI6 input	%IX6.5	BOOL		Digital input signal number 6 of DI16.
		DI7 input	%IX6.6	BOOL		Digital input signal number 7 of DI16.
		DI8 input	%IX6.7	BOOL		Digital input signal number 8 of DI16.
		DI9 input	%IX7.0	BOOL		Digital input signal number 9 of DI16.
		DI10 input	%IX7.1	BOOL		Digital input signal number 10 of DI16.
		DI11 input	%IX7.2	BOOL		Digital input signal number 11 of DI16.
		DI12 input	%IX7.3	BOOL		Digital input signal number 12 of DI16.
		DI13 input	%IX7.4	BOOL		Digital input signal number 13 of DI16.
		DI14 input	%IX7.5	BOOL		Digital input signal number 14 of DI16.
		DI15 input	%IX7.6	BOOL		Digital input signal number 15 of DI16.
		DI16 input	%IX7.7	BOOL		Digital input signal number 16 of DI16.

DI16 inputs as datatype WORD. Reset mapping

IEC Objects

Variable	Mapping	Type
Romod_16DI_Slave		IoDrv16DI

= Create new variable
 = Map to existing variable

Romod state mode

 Romod_8DO_Slave_9 (Romod 8DO Slave)

Device in running mode, valid license found.

 Romod_8DO_R_Slave (Romod 8DO-R Slave)

Device in running mode, no valid license found (trial).

 Romod_8DO_Slave_3 (Romod 8DO Slave)

Device in running mode, dip switch position on/off.

 Romod_8DO_Slave_6 (Romod 8DO Slave)

Bus Error - Device in stop mode.

 Romod_8DO_Slave_8 (Romod 8DO Slave)

Device in configuration mode.

General Information



Supplier	Pfänder GmbH Bachstr. 15 74585 Rot am See Germany
Support	support@pfaender.de
Product	Romod I/O Modules SL
Order Number	2312000001
Sales	CODESYS Store store.codesys.com
Scope of Delivery	<ul style="list-style-type: none"> ▪ Romod I/O Modules SL Library ▪ Device Descriptions ▪ Documentation included in library manager ▪ Hardware documentation Romod_Doku_DE.pdf

System Requirements and Restrictions

Programming System	CODESYS Development System V3.5.10.0
Target System	CODESYS Control V3.5.10.0
Supported Platforms / Devices	<p>Tested devices: CODESYS Control Win V3, Raspberry Pi,</p> <p>Notice: Use the project 'Device Reader' to find out the supported features of your device. 'Device Reader' is available for free in the CODESYS Store.</p>
Additional Requirements	RS485 COM-Port (also possible with USB Com-Port adapter), Modbus RTU License
Restrictions	The modules don't support real-time requirements. Maximum number of 30 romod slaves for each Romod-Master device.
Licensing	License activation optional on CODESYS Runtime Key or CODESYS Soft Key. Demomode for 30 minutes. License per runtime device necessary.
Required Accessory	Romod I/O modules from the the manufacturer Romotec (www.romotec.de)