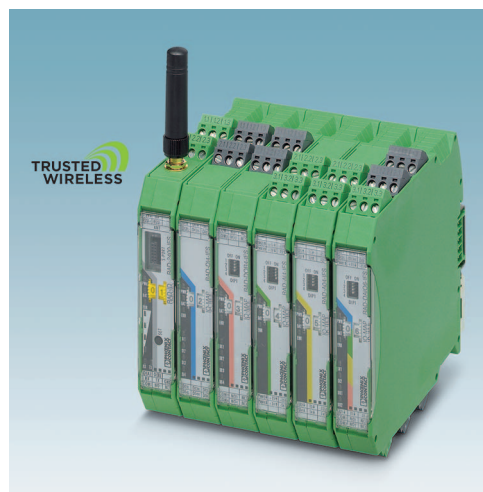


# RAD-...-IFS IO-INTEGRATION

## Radioline - Wireless integration of I/O signals into PROFIBUS or PROFINET

Application note  
106865\_en\_00

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### Description

This application note describes six different possibilities for how the I/O signals can be wirelessly integrated into PROFIBUS or PROFINET. For this you require the Radioline wireless modules for a 2400 MHz or 868 MHz wireless system and I/O extension modules:

Designation	Description	Order No.	Link to item
RAD-2400-IFS	2400 MHz wireless transceiver	2901541	<a href="http://phoenixcontact.net/product/2901541">phoenixcontact.net/product/2901541</a>
or	or		
RAD-868-IFS	868 MHz wireless transceiver	2904909	<a href="http://phoenixcontact.net/product/2904909">phoenixcontact.net/product/2904909</a>
<b>I/O extension modules</b>			
RAD-AI4-IFS	4 analog current inputs	2901537	<a href="http://phoenixcontact.net/product/2901537">phoenixcontact.net/product/2901537</a>
RAD-PT100-4-IFS	4 Pt 100 inputs	2904035	<a href="http://phoenixcontact.net/product/2904035">phoenixcontact.net/product/2904035</a>
RAD-AO4-IFS	4 analog outputs	2901538	<a href="http://phoenixcontact.net/product/2901538">phoenixcontact.net/product/2901538</a>
RAD-DI4-IFS	4 digital inputs	2901535	<a href="http://phoenixcontact.net/product/2901535">phoenixcontact.net/product/2901535</a>
RAD-DI8-IFS	8 digital inputs or 2 pulse inputs	2901539	<a href="http://phoenixcontact.net/product/2901539">phoenixcontact.net/product/2901539</a>
RAD-DOR4-IFS	4 digital relay outputs	2901536	<a href="http://phoenixcontact.net/product/2901536">phoenixcontact.net/product/2901536</a>
RAD-DO8-IFS	8 digital transistor outputs	2902811	<a href="http://phoenixcontact.net/product/2902811">phoenixcontact.net/product/2902811</a>
RAD-DAIO6-IFS	1 analog input/output, 2 digital wide-range inputs/outputs	2901533	<a href="http://phoenixcontact.net/product/2901533">phoenixcontact.net/product/2901533</a>
<b>Cable</b>			
RAD-CABLE-USB	USB data cable	2903447	<a href="http://phoenixcontact.net/product/2903447">phoenixcontact.net/product/2903447</a>



#### WARNING:

This application note does **not** replace the device-specific documents.  
Please follow the safety notes in the associated package slips and data sheets.



Make sure you always use the latest documentation.  
It can be downloaded at [phoenixcontact.net/products](http://phoenixcontact.net/products).

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# 1 I/O integration into PROFIBUS

## 1.1 PROFIBUS terminal block IB IL PB MA-PAC

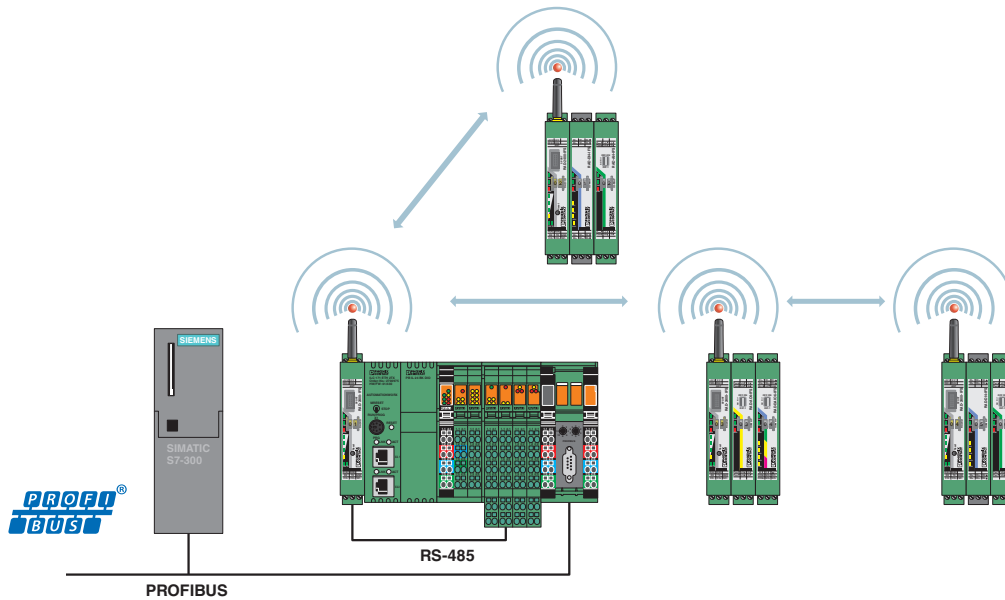


Figure 1 PROFIBUS terminal block IB IL PB MA-PAC

- Process data width: 48 words IN/OUT

For this sample installation you need:

Designation	Description	Order No.	Link to item
RAD-2400-IFS or RAD-868-IFS	2400 MHz wireless transceiver or 868 MHz wireless transceiver	2901541  2904909	<a href="http://phoenixcontact.net/product/2901541">phoenixcontact.net/product/2901541</a>  <a href="http://phoenixcontact.net/product/2904909">phoenixcontact.net/product/2904909</a>
RAD-...-IFS	I/O extension modules, digital or analog inputs and outputs, depending on the application	-	-
ILC 171 ETH 2TX	Small-scale controller with two Ethernet ports	2700975	<a href="http://phoenixcontact.net/product/2700975">phoenixcontact.net/product/2700975</a>
IB IL RS 485/422-PRO-PAC	Inline RS-485/-422 function terminal	2863627	<a href="http://phoenixcontact.net/product/2863627">phoenixcontact.net/product/2863627</a>
IB IL PB MA-PAC	Inline PROFIBUS terminal block	2700630	<a href="http://phoenixcontact.net/product/2700630">phoenixcontact.net/product/2700630</a>
PC WORX EXPRESS	Free programming environment for modular small-scale controllers	2988670	<a href="http://phoenixcontact.net/product/2988670">phoenixcontact.net/product/2988670</a>
RESY-DATA-A LIC + Radioline function blocks	License for Remote Systems (ReSy)	2876847	<a href="http://phoenixcontact.net/product/2876847">phoenixcontact.net/product/2876847</a>
Siemens CPU 315-2DP	Central processing unit with MPI	-	-

1.2 Siemens CP 343-1 communications processor

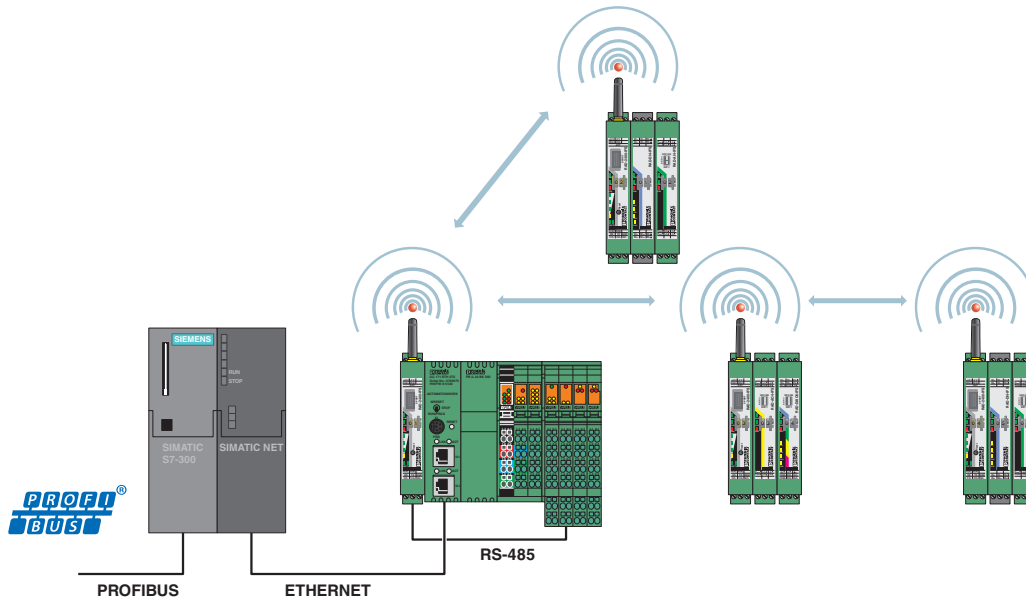


Figure 2 Siemens CP 343-1 communications processor

For this sample installation you need:

Designation	Description	Order No.	Link to item
RAD-2400-IFS or RAD-868-IFS	2400 MHz wireless transceiver or 868 MHz wireless transceiver	2901541  2904909	<a href="http://phoenixcontact.net/product/2901541">phoenixcontact.net/product/2901541</a>  <a href="http://phoenixcontact.net/product/2904909">phoenixcontact.net/product/2904909</a>
RAD-...-IFS	I/O extension modules, digital or analog inputs and outputs, depending on the application	-	-
ILC 171 ETH 2TX	Small-scale controller with two Ethernet ports	2700975	<a href="http://phoenixcontact.net/product/2700975">phoenixcontact.net/product/2700975</a>
IB IL RS 485/422-PRO-PAC	Inline RS-485/-422 function terminal	2863627	<a href="http://phoenixcontact.net/product/2863627">phoenixcontact.net/product/2863627</a>
PC WORX EXPRESS	Free programming environment for modular small-scale controllers	2988670	<a href="http://phoenixcontact.net/product/2988670">phoenixcontact.net/product/2988670</a>
RESY-DATA-A LIC + Radioline function blocks	License for Remote Systems (ReSy)	2876847	<a href="http://phoenixcontact.net/product/2876847">phoenixcontact.net/product/2876847</a>
Siemens CPU 315-2DP	Central processing unit with MPI	-	-
Siemens CP 343-1 + Siemens COM library	Communications processor	-	-

1.3 Integrated Ethernet interface

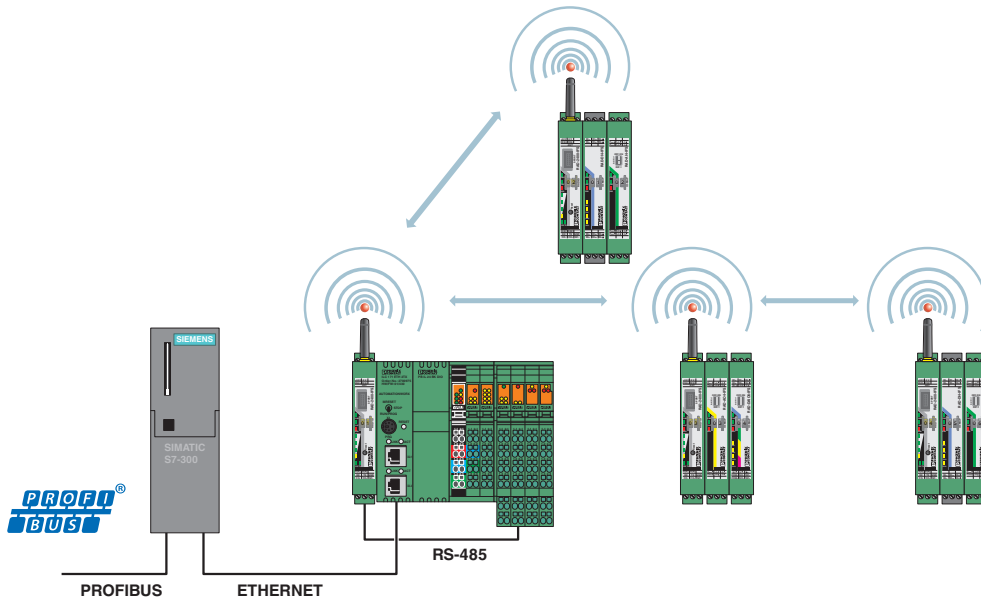


Figure 3 Integrated Ethernet interface

For this sample installation you need:

Designation	Description	Order No.	Link to item
RAD-2400-IFS or RAD-868-IFS	2400 MHz wireless transceiver or 868 MHz wireless transceiver	2901541 2904909	<a href="http://phoenixcontact.net/product/2901541">phoenixcontact.net/product/2901541</a> <a href="http://phoenixcontact.net/product/2904909">phoenixcontact.net/product/2904909</a>
RAD-...-IFS	I/O extension modules, digital or analog inputs and outputs, depending on the application	-	-
ILC 171 ETH 2TX	Small-scale controller with two Ethernet ports	2700975	<a href="http://phoenixcontact.net/product/2700975">phoenixcontact.net/product/2700975</a>
IB IL RS 485/422-PRO-PAC	Inline RS-485/-422 function terminal	2863627	<a href="http://phoenixcontact.net/product/2863627">phoenixcontact.net/product/2863627</a>
PC WORX EXPRESS	Free programming environment for modular small-scale controllers	2988670	<a href="http://phoenixcontact.net/product/2988670">phoenixcontact.net/product/2988670</a>
RESY-DATA-A LIC + Radioline function blocks	License for Remote Systems (ReSy)	2876847	<a href="http://phoenixcontact.net/product/2876847">phoenixcontact.net/product/2876847</a>
Siemens CPU S7-300 + Siemens COM library	Central processing unit with integrated Ethernet interface	-	-

1.4 Modbus/RTU with Siemens CP 341

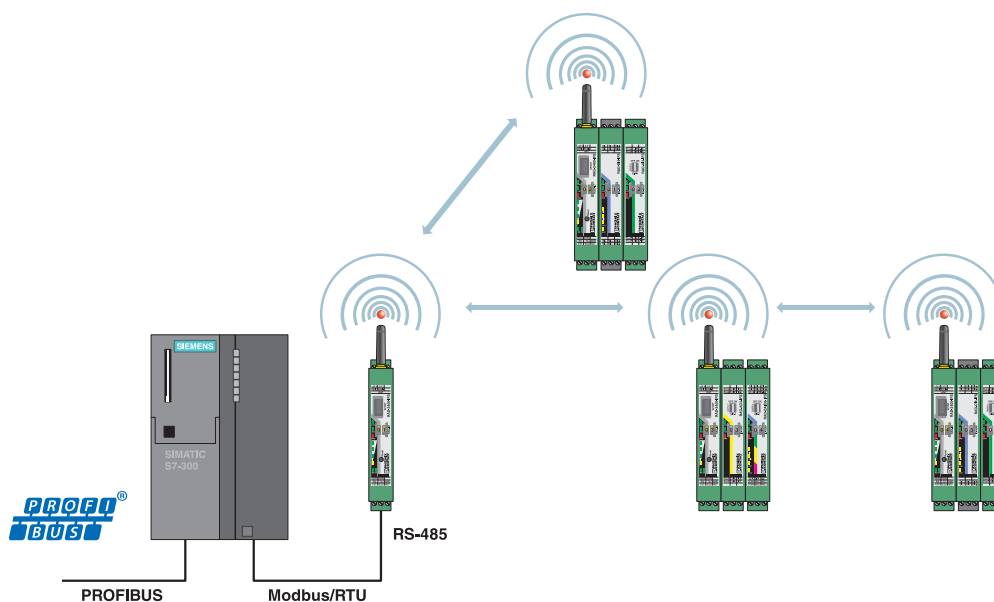


Figure 4 Modbus/RTU with Siemens CP 341

For this sample installation you need:

Designation	Description	Order No.	Link to item
RAD-2400-IFS or RAD-868-IFS	2400 MHz wireless transceiver or 868 MHz wireless transceiver	2901541 2904909	<a href="http://phoenixcontact.net/product/2901541">phoenixcontact.net/product/2901541</a> <a href="http://phoenixcontact.net/product/2904909">phoenixcontact.net/product/2904909</a>
RAD-...-IFS	I/O extension modules, digital or analog inputs and outputs, depending on the application	-	-
Siemens CPU 315-2DP	Central processing unit with MPI	-	-
Siemens CP 341	Communications processor	-	-

1.5 Modbus/RTU with PROFIBUS gateway

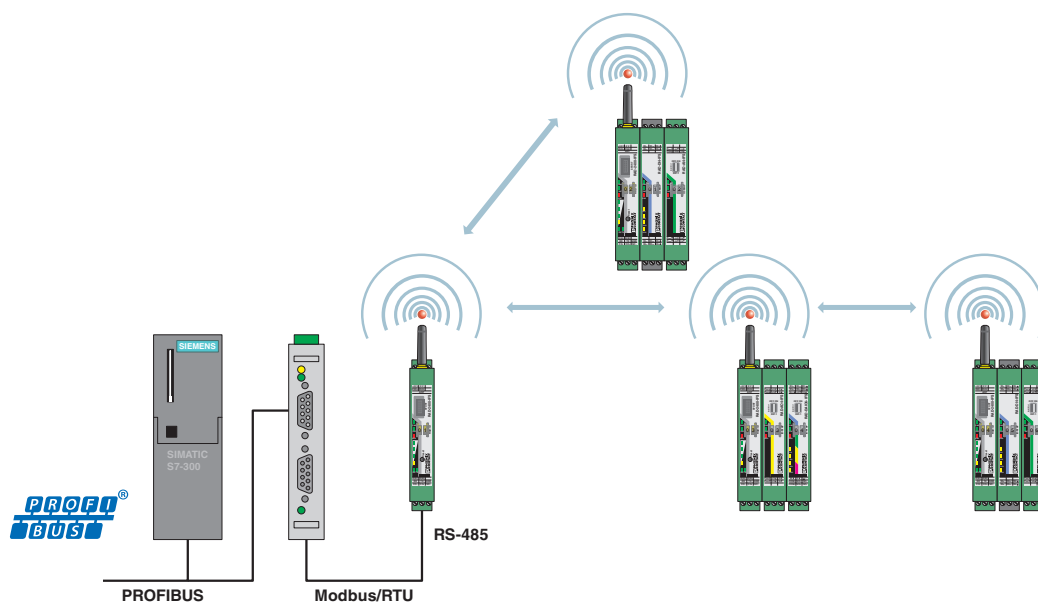


Figure 5 Modbus/RTU with PROFIBUS gateway

For this sample installation you need:

Designation	Description	Order No.	Link to item
RAD-2400-IFS or RAD-868-IFS	2400 MHz wireless transceiver or 868 MHz wireless transceiver	2901541  2904909	<a href="http://phoenixcontact.net/product/2901541">phoenixcontact.net/product/2901541</a>  <a href="http://phoenixcontact.net/product/2904909">phoenixcontact.net/product/2904909</a>
RAD-...-IFS	I/O extension modules, digital or analog inputs and outputs, depending on the application	-	-
HD67561 (ADFweb)	Gateway, PROFIBUS slave/Modbus master	-	-
Siemens CPU 315-2DP	Central processing unit with MPI	-	-

## 2 I/O integration into PROFINET

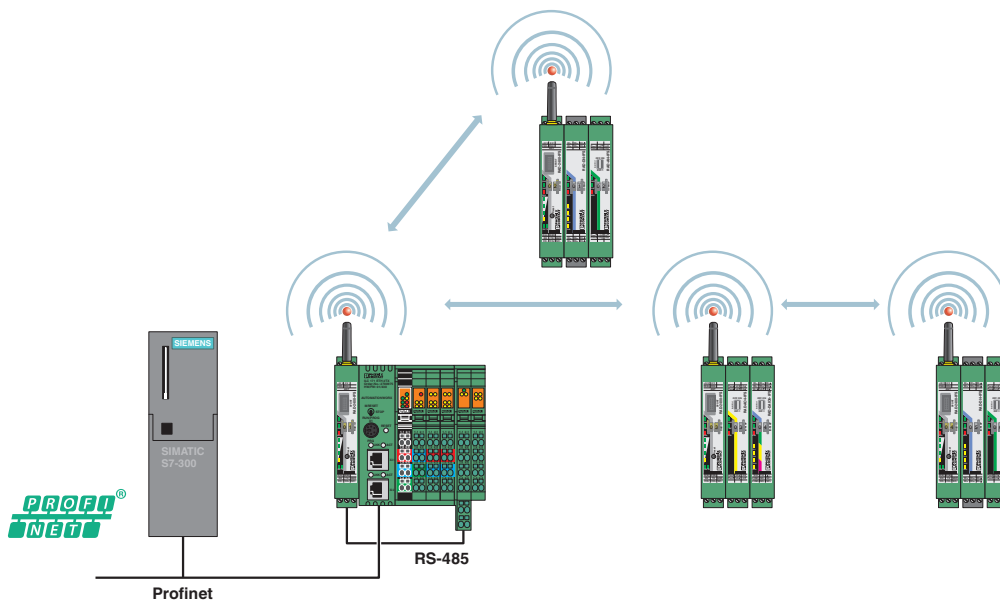


Figure 6 I/O integration into PROFINET

For this sample installation you need:

Designation	Description	Order No.	Link to item
RAD-2400-IFS or RAD-868-IFS	2400 MHz wireless transceiver or 868 MHz wireless transceiver	2901541  2904909	<a href="http://phoenixcontact.net/product/2901541">phoenixcontact.net/product/2901541</a>  <a href="http://phoenixcontact.net/product/2904909">phoenixcontact.net/product/2904909</a>
RAD-...-IFS	I/O extension modules, digital or analog inputs and outputs, depending on the application	-	-
ILC 171 ETH 2TX	Small-scale controller with two Ethernet ports	2700975	<a href="http://phoenixcontact.net/product/2700975">phoenixcontact.net/product/2700975</a>
IB IL RS 485/422-PRO-PAC	Inline RS-485/-422 function terminal	2863627	<a href="http://phoenixcontact.net/product/2863627">phoenixcontact.net/product/2863627</a>
PC WORX EXPRESS	Free programming environment for modular small-scale controllers	2988670	<a href="http://phoenixcontact.net/product/2988670">phoenixcontact.net/product/2988670</a>
RESY-DATA-A LIC + Radioline function blocks	License for Remote Systems (ReSy)	2876847	<a href="http://phoenixcontact.net/product/2876847">phoenixcontact.net/product/2876847</a>
Siemens CPU 315-2PN/DP	Central processing unit	-	-



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