DOWNLOADED FROM WWW.SCATTS.CO.UK

RAD-...-IFS IO-INTEGRATION

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

Application note
106865_en_00

© PHOENIX CONTACT 2015-08-18

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 or RAD-868-IFS	2400 MHz wireless transceiver or 868 MHz wireless transceiver	2901541 2904909	phoenixcontact.net/product/2901541 phoenixcontact.net/product/2904909
I/O extension modules			
RAD-AI4-IFS	4 analog current inputs	2901537	phoenixcontact.net/product/2901537
RAD-PT100-4-IFS	4 Pt 100 inputs	2904035	phoenixcontact.net/product/2904035
RAD-AO4-IFS	4 analog outputs	2901538	phoenixcontact.net/product/2901538
RAD-DI4-IFS	4 digital inputs	2901535	phoenixcontact.net/product/2901535
RAD-DI8-IFS	8 digital inputs or 2 pulse inputs	2901539	phoenixcontact.net/product/2901539
RAD-DOR4-IFS	4 digital relay outputs	2901536	phoenixcontact.net/product/2901536
RAD-DO8-IFS	8 digital transistor outputs	2902811	phoenixcontact.net/product/2902811
RAD-DAIO6-IFS	1 analog input/output, 2 digital wide-range inputs/outputs	2901533	phoenixcontact.net/product/2901533
Cable			
RAD-CABLE-USB	USB data cable	2903447	phoenixcontact.net/product/2903447

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.

DOWNLOADED FROM WWW.SCATTS.CO.UK

DOWNLOADED FROM WWW.SCATTS.CO.UK

Table of contents

1 I/O integration into PROFIBUS 3
1.1 PROFIBUS terminal block IB IL PB MA-PAC 3
1.2 Siemens CP 343-1 communications processor 4
1.3 Integrated Ethernet interface 5
1.4 Modbus/RTU with Siemens CP 341 6
1.5 Modbus/RTU with PROFIBUS gateway 7
2 I/O integration into PROFINET 8

DOWNLOADED FROM WWW.SCATTS.CO.UK

DOWNLOADED FROM WWW.SCATTS.CO.UK

1 I/O integration into PROFIBUS

1.1 PROFIBUS terminal block IB IL PB MA-PAC

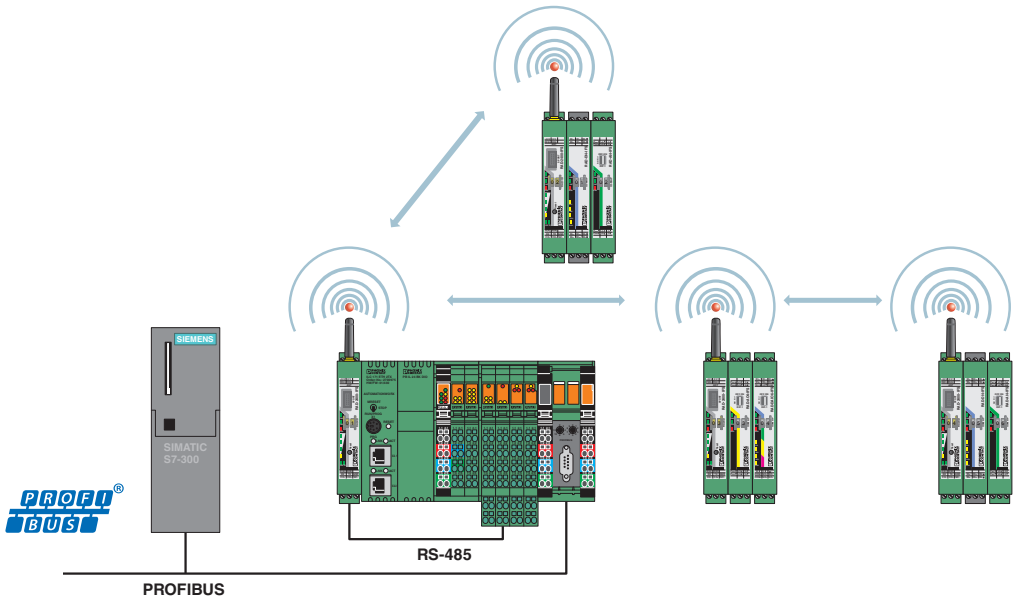


Figure 1 PROFIBUS terminal block IB IL PB MA-PAC

– 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	phoenixcontact.net/product/2901541 phoenixcontact.net/product/2904909
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	phoenixcontact.net/product/2700975
IB IL RS 485/422-PRO-PAC	Inline RS-485/-422 function terminal	2863627	phoenixcontact.net/product/2863627
IB IL PB MA-PAC	Inline PROFIBUS terminal block	2700630	phoenixcontact.net/product/2700630
PC WORX EXPRESS	Free programming environment for modular small-scale controllers	2988670	phoenixcontact.net/product/2988670
RESY-DATA-A LIC + Radioline function blocks	License for Remote Systems (ReSy)	2876847	phoenixcontact.net/product/2876847
Siemens CPU 315-2DP	Central processing unit with MPI	-	-

DOWNLOADED FROM WWW.SCATTS.CO.UK

DOWNLOADED FROM WWW.SCATTS.CO.UK

1.2 Siemens CP 343-1 communications processor

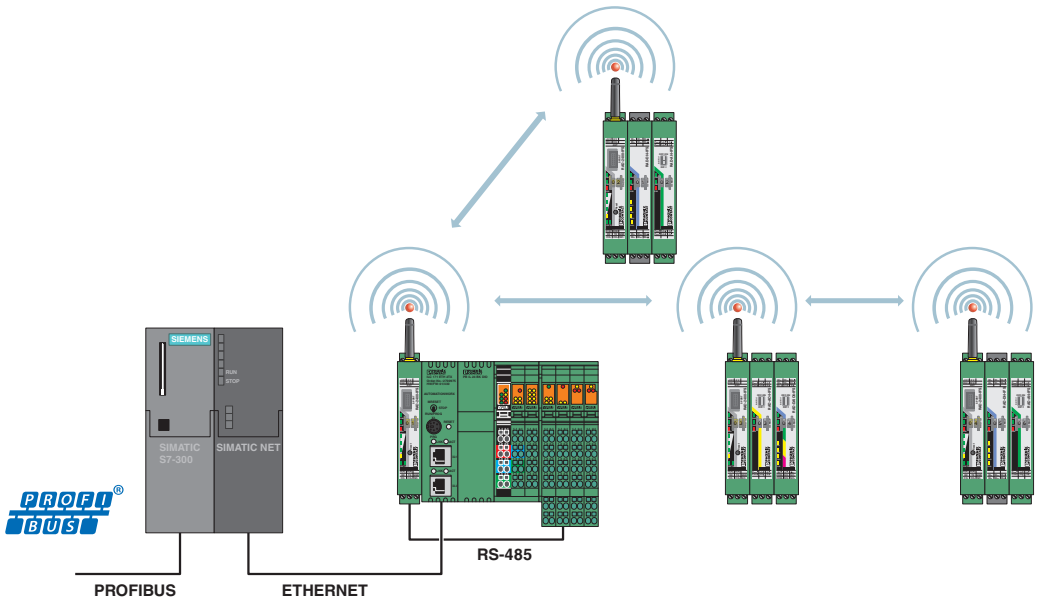


Figure 2 Siemens CP 343-1 communications processor

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	phoenixcontact.net/product/2901541 phoenixcontact.net/product/2904909
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	phoenixcontact.net/product/2700975
IB IL RS 485/422-PRO-PAC	Inline RS-485/-422 function terminal	2863627	phoenixcontact.net/product/2863627
PC WORX EXPRESS	Free programming environment for modular small-scale controllers	2988670	phoenixcontact.net/product/2988670
RESY-DATA-A LIC + Radioline function blocks	License for Remote Systems (ReSy)	2876847	phoenixcontact.net/product/2876847
Siemens CPU 315-2DP	Central processing unit with MPI	-	-
Siemens CP 343-1 + Siemens COM library	Communications processor	-	-

DOWNLOADED FROM WWW.SCATTS.CO.UK

DOWNLOADED FROM WWW.SCATTS.CO.UK

1.3 Integrated Ethernet interface

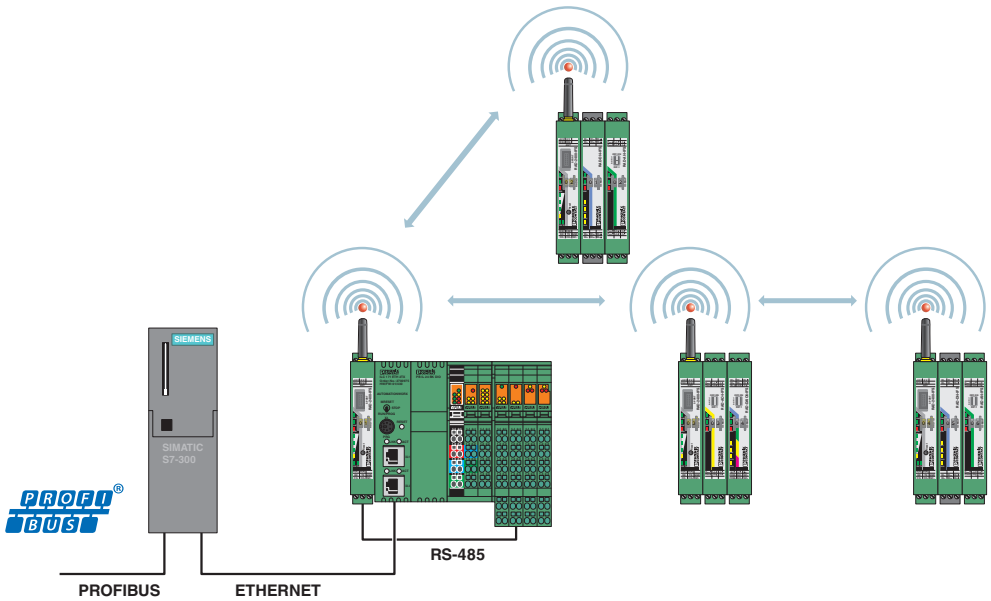


Figure 3 Integrated Ethernet interface

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	phoenixcontact.net/product/2901541 phoenixcontact.net/product/2904909
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	phoenixcontact.net/product/2700975
IB IL RS 485/422-PRO-PAC	Inline RS-485/-422 function terminal	2863627	phoenixcontact.net/product/2863627
PC WORX EXPRESS	Free programming environment for modular small-scale controllers	2988670	phoenixcontact.net/product/2988670
RESY-DATA-A LIC + Radioline function blocks	License for Remote Systems (ReSy)	2876847	phoenixcontact.net/product/2876847
Siemens CPU S7-300 + Siemens COM library	Central processing unit with integrated Ethernet interface	-	-

DOWNLOADED FROM WWW.SCATTS.CO.UK

DOWNLOADED FROM WWW.SCATTS.CO.UK

1.4 Modbus/RTU with Siemens CP 341

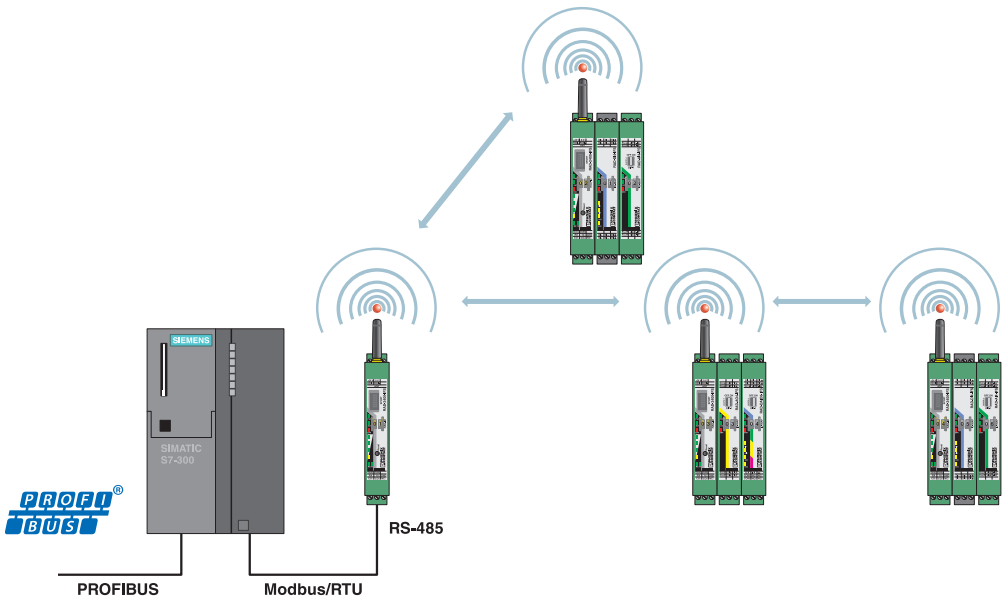


Figure 4 Modbus/RTU with Siemens CP 341

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	phoenixcontact.net/product/2901541 phoenixcontact.net/product/2904909
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	-	-

DOWNLOADED FROM WWW.SCATTS.CO.UK

DOWNLOADED FROM WWW.SCATTS.CO.UK

1.5 Modbus/RTU with PROFIBUS gateway

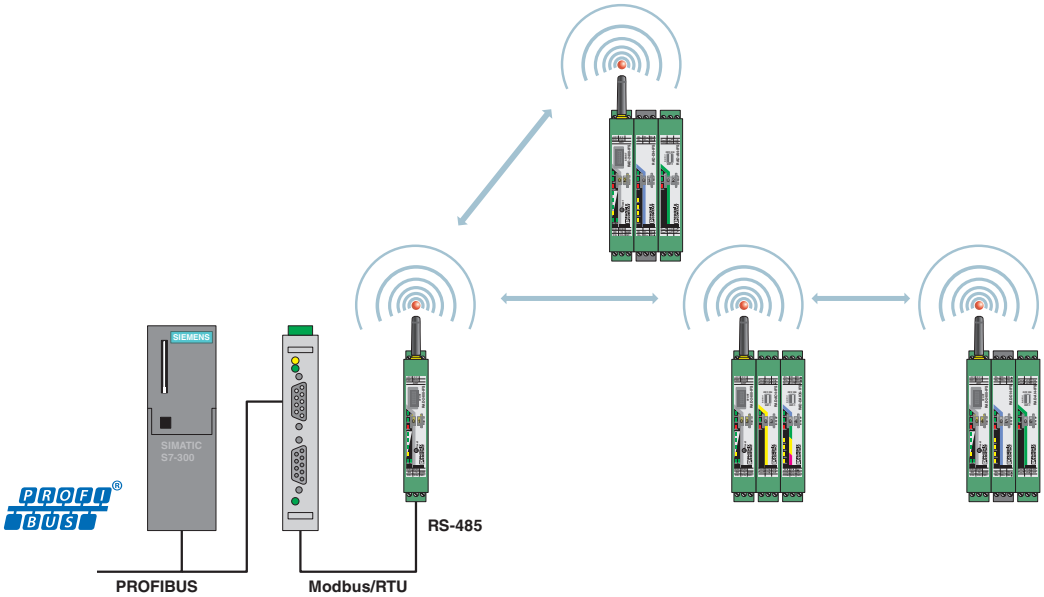


Figure 5 Modbus/RTU with PROFIBUS gateway

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	phoenixcontact.net/product/2901541 phoenixcontact.net/product/2904909
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	-	-

DOWNLOADED FROM WWW.SCATTS.CO.UK

DOWNLOADED FROM WWW.SCATTS.CO.UK

2 I/O integration into PROFINET

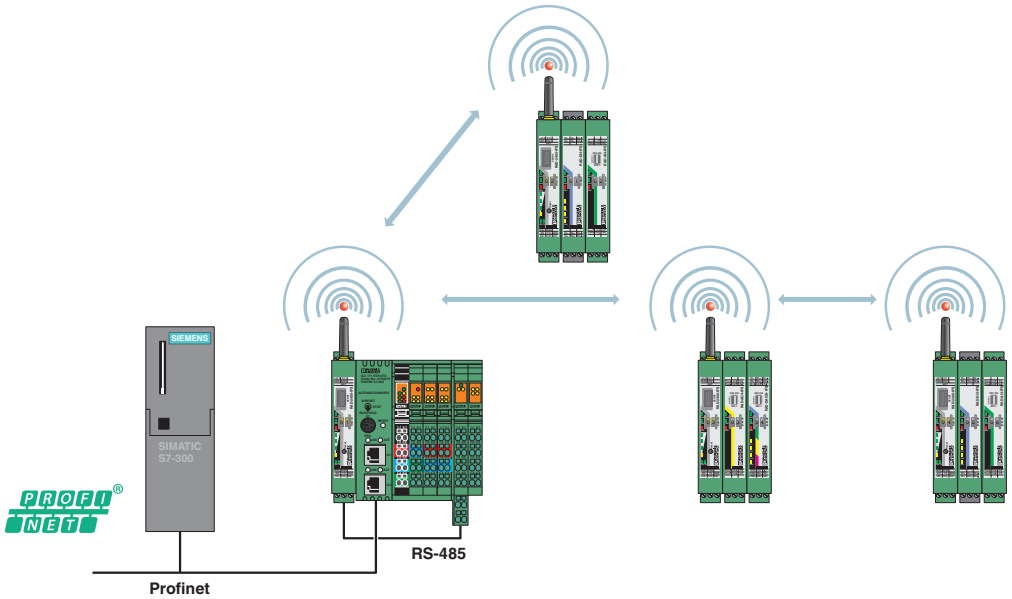


Figure 6 I/O integration into PROFINET

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	phoenixcontact.net/product/2901541 phoenixcontact.net/product/2904909
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	phoenixcontact.net/product/2700975
IB IL RS 485/422-PRO-PAC	Inline RS-485/-422 function terminal	2863627	phoenixcontact.net/product/2863627
PC WORX EXPRESS	Free programming environment for modular small-scale controllers	2988670	phoenixcontact.net/product/2988670
RESY-DATA-A LIC + Radioline function blocks	License for Remote Systems (ReSy)	2876847	phoenixcontact.net/product/2876847
Siemens CPU 315-2PN/DP	Central processing unit	-	-

DOWNLOADED FROM WWW.SCATTS.CO.UK

SCATTERGOOD & JOHNSON LTD
ELECTRICAL ENGINEERING & FLUID CONTROL DISTRIBUTORS
Est.1899

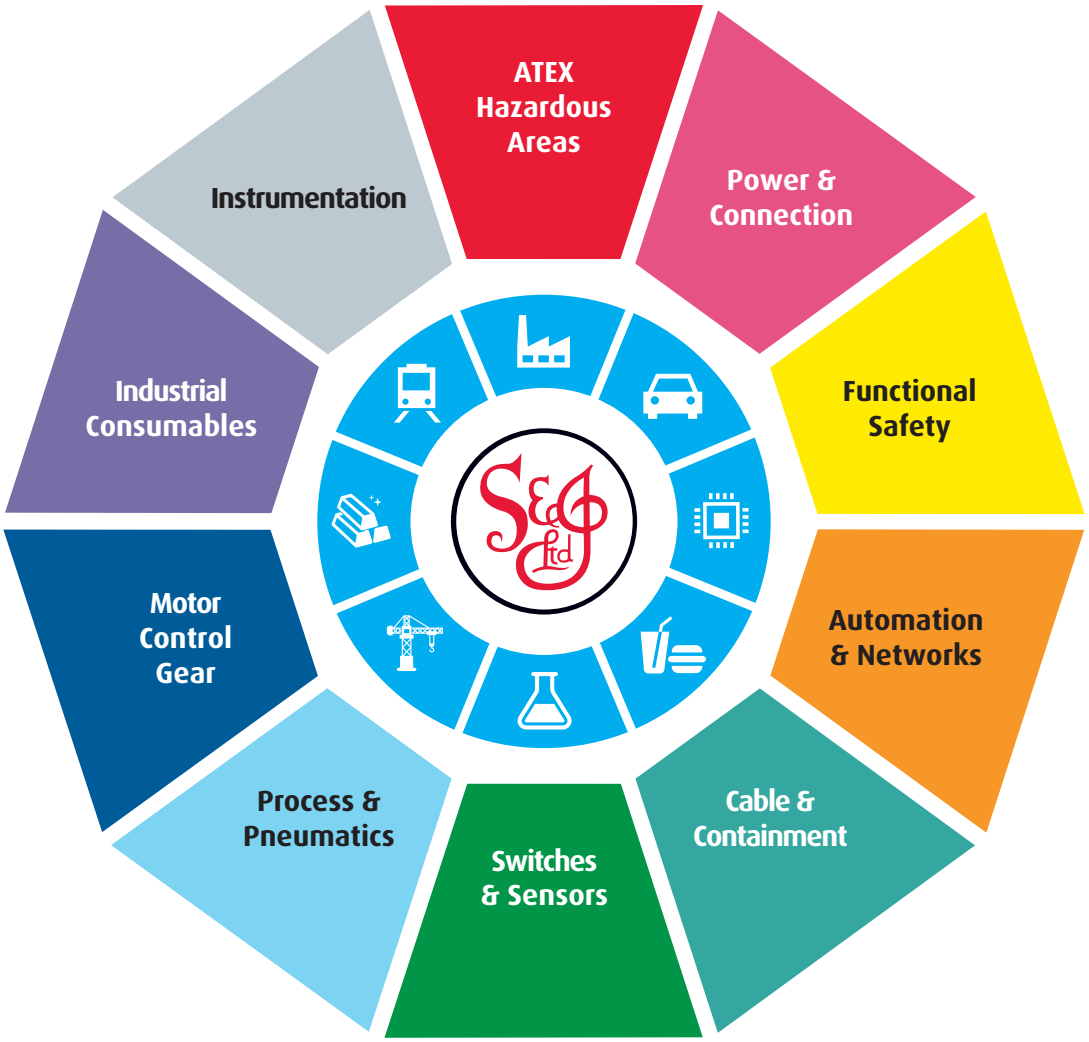
At Scattergood & Johnson Ltd, we pride ourselves on being a technical distributor to specialist industries.

Working with a range of quality product suppliers across a number of specialist markets, we are not your average 'box shifter' - we are your technical and supply chain partner.

We fully support every product we sell - for free! Our internal team and external sales engineers can answer any product or application question, no matter the complexity.

Backing up this technical ability is a range of 50,000+ products available from stock for nationwide next day delivery (same day if required!), or you can collect what you need from any of our trade counters around the UK.

Select your specialist interest below to learn more about how we can help.



Online, In Branch and On the Road - Scattergood & Johnson Ltd, there when you need us.

www.scatts.co.uk