

## Hybrid motor starter - ELR W3-230AC/500AC- 9I - 2297060

Please be informed that the data shown in this PDF Document is generated from our Online Catalog. Please find the complete data in the user's documentation. Our General Terms of Use for Downloads are valid (<http://phoenixcontact.com/download>)




"4 in 1" three-phase semiconductor reversing contactor with 230 V AC input, 9 A output current, emergency stop function, and adjustable overload switching.

### Your advantages

- ✓ 22.5 mm wide
- ✓ Safety level according to IEC 61508-1: SIL 3, ISO 13849: PL e
- ✓ Reduction in wiring
- ✓ Long service life
- ✓ Space saving
- ✓ 3-phase loop bridges
- ✓ Adjustable current for bimetal function
- ✓ Low-wear switching



### Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 170598
GTIN	4046356170598
Weight per Piece (excluding packing)	223.150 g
Custom tariff number	85371098
Country of origin	Germany

### Technical data

#### Dimensions

Width	22.5 mm
Height	107 mm
Depth	114 mm

#### Ambient conditions

Ambient temperature (operation)	-25 °C ... 70 °C (observe derating)
---------------------------------	-------------------------------------

## Hybrid motor starter - ELR W3-230AC/500AC- 9I - 2297060

### Technical data

#### Ambient conditions

Ambient temperature (storage/transport)	-40 °C ... 80 °C
Maximum altitude	≤ 2000 m
Degree of protection	IP20

#### Device supply

Rated control circuit supply voltage $U_s$	230 V AC
Control supply voltage range	92 V AC ... 253 V AC
Rated control supply current $I_s$	4 mA
Mains frequency	40/100 Hz
Type of protection	Surge protection

#### Input data

Input name	Control input right/left
Rated actuating voltage $U_c$	230 V AC
Triggering voltage range	92 V AC ... 253 V AC
Rated actuating current $I_c$	7 mA
Switching threshold	44 V AC ("0" signal) 85 V AC ("1" signal)
Switching level	< 5 V DC (For EMERGENCY STOP)
Typical response time	< 35 ms
Typical turn-off time	< 80 ms

#### Output data load output

Output name	AC output
Rated operating voltage $U_e$	500 V AC
Operating voltage range	42 V AC ... 550 V AC
Rated operating current $I_e$	9 A (AC-51) 6.5 A (AC-53a)
Mains frequency	50/60 Hz
Load current range	1.5 A ... 9 A (see to derating)
Trigger characteristic in acc. with IEC 60947-4-2	Class 10A
Cooling time	20 min. (for auto reset)
Leakage current	0 mA
Residual voltage	< 0.5 V
Surge current	100 A (t = 10 ms)
Type of protection	Surge protection

#### Output data reply output

Output name	Acknowledge output
Note	Confirmation: floating change-over contact, signal contact
Contact type	1 PDT
Switching capacity according to IEC 60947-5-1	3 A (230 V, AC15) 2 A (24 V, DC13)

## Hybrid motor starter - ELR W3-230AC/500AC- 9I - 2297060

### Technical data

#### General

Motor starter type	Reversing starter
Switching frequency	≤ 2 Hz (Load-dependent)
Mounting position	Vertical (horizontal DIN rail)
Mounting type	DIN rail mounting
Assembly instructions	Can be aligned with spacing = 20 mm
Operating mode	100% operating factor
Maximum power dissipation	16.1 W
Minimum power dissipation	2.6 W
Operating voltage display	Green LED
Status display	Yellow LED
Indication	Red LED

#### Connection data

Connection name	Control circuits
Connection method	Screw connection
Stripping length	8 mm
Screw thread	M3
Conductor cross section solid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section AWG	24 ... 14
Torque	0.5 Nm ... 0.6 Nm
	5 lb <sub>f</sub> -in. ... 7 lb <sub>f</sub> -in.

#### Connection data 2

Connection name	Load circuit
Connection method	Screw connection
Stripping length	8 mm
Screw thread	M3
Conductor cross section solid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section AWG	24 ... 14
Torque	0.5 Nm ... 0.6 Nm
	5 lb <sub>f</sub> -in. ... 7 lb <sub>f</sub> -in.

#### Insulation characteristics

Rated insulation voltage	500 V
Rated surge voltage	6 kV
Overvoltage category	III
Degree of pollution	2
Designation	Insulation characteristics between the control input and control supply voltage, and auxiliary circuit to the main circuit
Insulation	Safe isolation (IEC 60947-1/EN 50178) at operating voltage ≤ 300 V AC

# Hybrid motor starter - ELR W3-230AC/500AC- 9I - 2297060

## Technical data

### Insulation characteristics

	Basic isolation (IEC 60947-1) at operating voltage 300 ... 500 V AC
	Safe isolation (EN 50178) at operating voltage 300 ... 500 V AC
Designation	Isolation characteristics between the control input and control supply voltage to auxiliary circuit
Insulation	Safe isolation (IEC 60947-1) in the auxiliary circuit $\leq$ 300 V AC
	Safe isolation (EN 50178) in the auxiliary circuit $\leq$ 300 V AC

### Standards and Regulations

Designation	Standards/regulations
Standards/regulations	DIN EN 50178
	EN 60947
	IEC 61508
	ISO 13849

### Conformance/approvals

Designation	ATEX
Identification	# II (2) G [Ex e] [Ex d] [Ex px]
	# II (2) D [Ex t] [Ex p]
Certificate	PTB 07 ATEX 3145
Designation	UL approval
Certificate	NLDX.E228652
Designation	Safety Integrity Level (SIL, IEC 61508)
Identification	$\leq$ 3
Additional text	Safe shutdown
Designation	Safety Integrity Level (SIL, IEC 61508)
Identification	2
Additional text	Motor protection
Designation	Performance Level (ISO 13849)
Identification	$\leq$ e
Additional text	Safe shutdown
Designation	Category (ISO 13849)
Identification	$\leq$ 3
Additional text	Safe shutdown

### UL data

SCCR	100 kA (500 V AC (fuse: 30 A class CC/30 A class J (high fault)))
	5 kA (500 V AC (fuse: 20 A RK5 (standard fault)))
FLA	6.5 A (500 V AC)
Group installation	20 A (class RK5, SCCR 5kA, #24 - 14 AWG max. solid and stranded)
	30 A (class CC or J, SCCR 100kA, #24 - 14 AWG max, solid and stranded)
Category code	NLDX

### Environmental Product Compliance

# Hybrid motor starter - ELR W3-230AC/500AC- 9I - 2297060

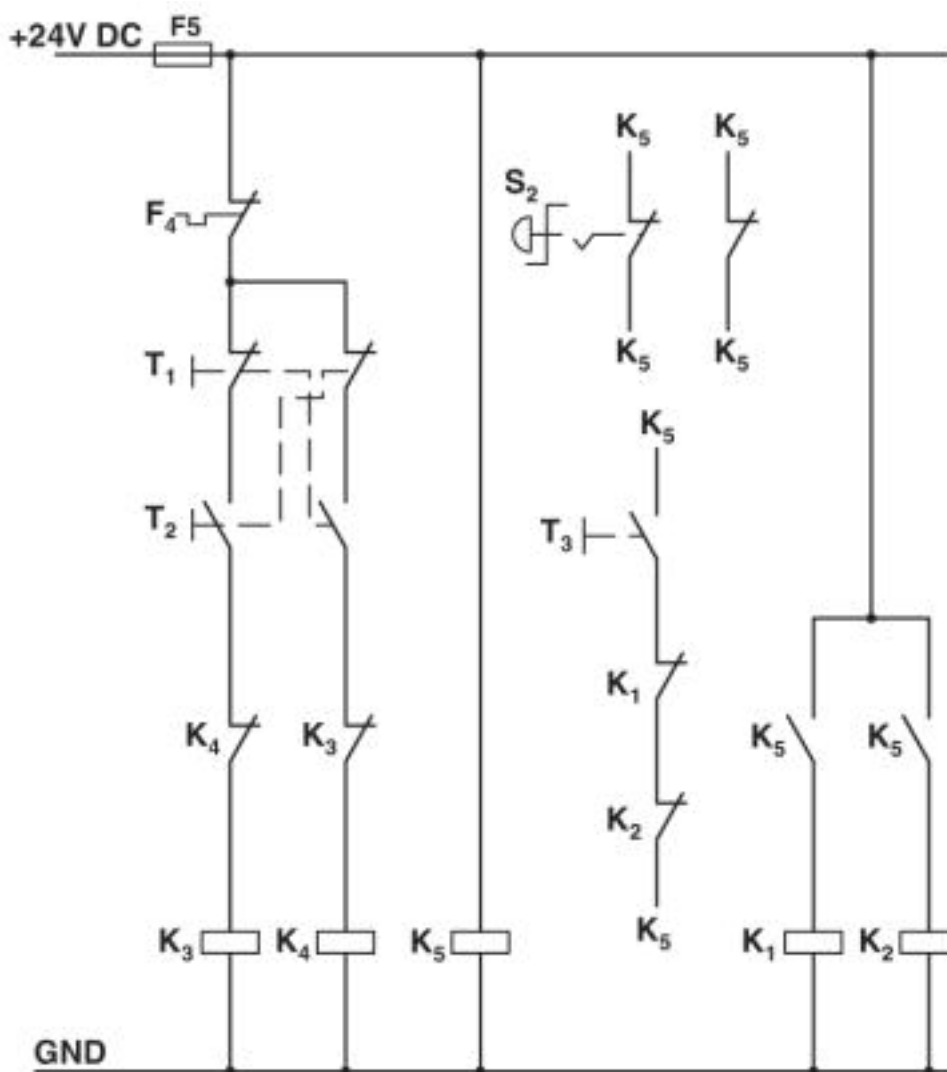
## Technical data

### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

## Drawings

Circuit diagram



Conventional structure

Control current path reversing contactor according to category 3

K1 + K2 = Emergency stop contactor

K3 = Left contactor

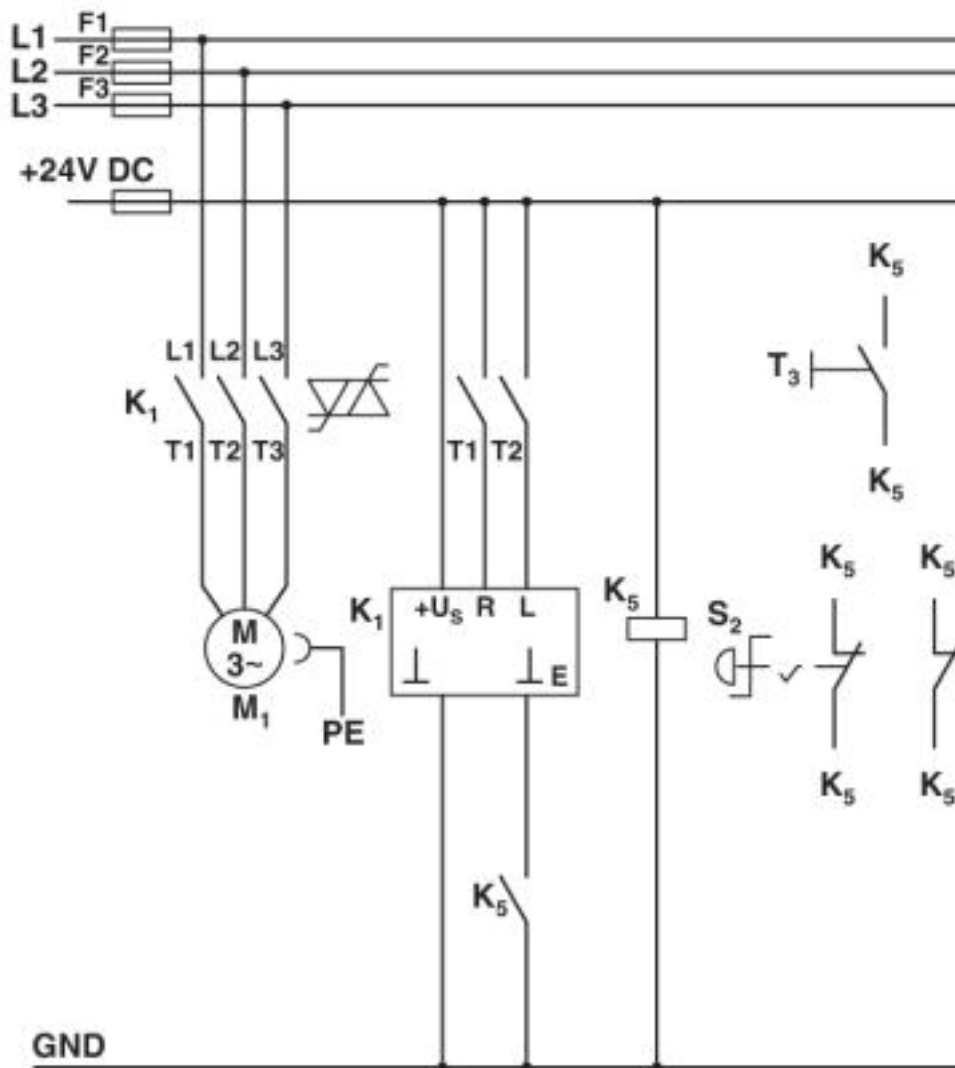
K4 = Right contactor

K5 = PSR SCP-24DC.../Safety relay

# Hybrid motor starter - ELR W3-230AC/500AC- 9I - 2297060

T1 = Right, T2 = Left, T3 = Reset  
 S2 = Emergency stop  
 F4 = Motor protection relay

Circuit diagram



Structure with CONTACTRON

Main and control current path for '4 in 1' hybrid motor starter with reversing function according to category 3

K1 = '4 in 1' hybrid motor starter with reversing function

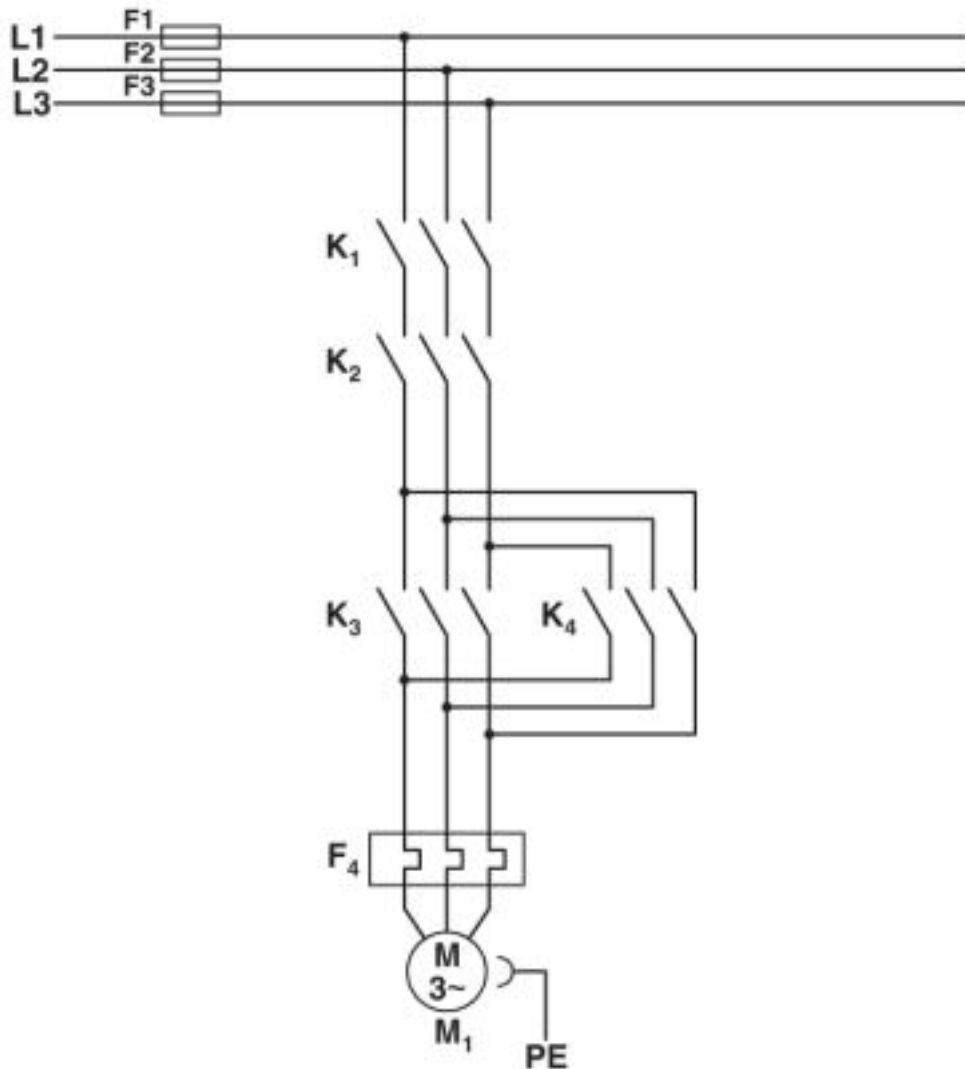
K5 = PSR SCP-24DC.../Safety relay

T1 = Right, T2 = Left, T3 = Reset

S2 = Emergency stop

## Hybrid motor starter - ELR W3-230AC/500AC- 9I - 2297060

Circuit diagram



Conventional structure

Main current path for reversing contactor according to category 3

K1 + K2 = Emergency stop contactor

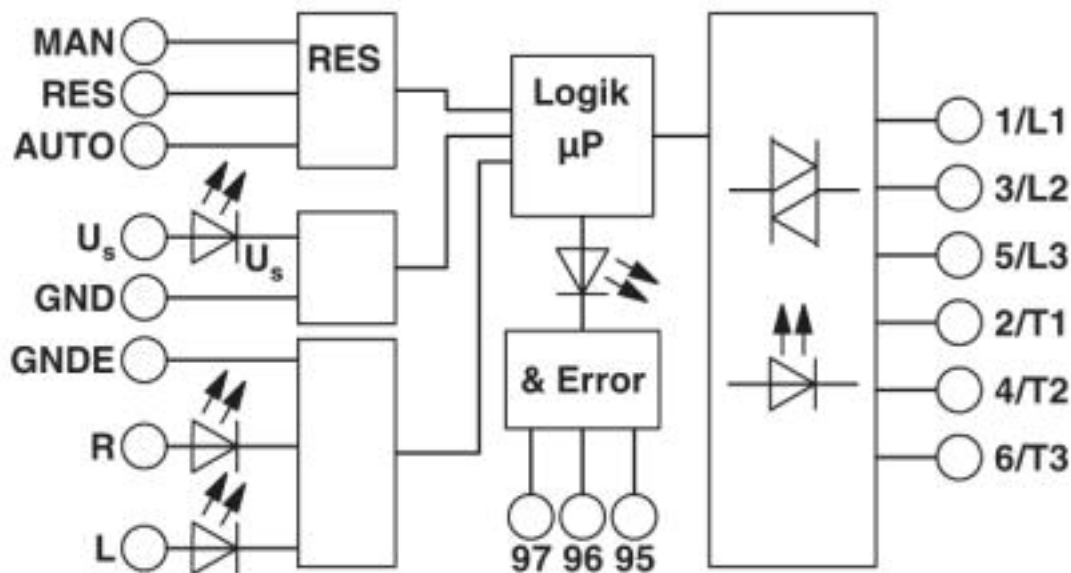
K3 = Left contactor

K4 = Right contactor

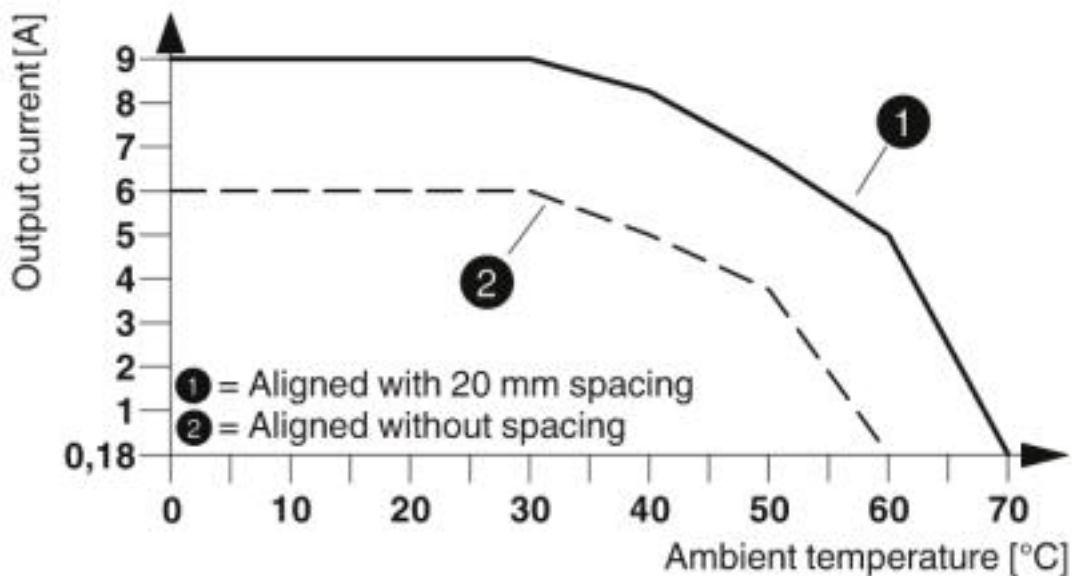
F4 = Motor protection relay

# Hybrid motor starter - ELR W3-230AC/500AC- 9I - 2297060

Block diagram



Diagram



Derating diagram

## Classifications

eCl@ss

eCl@ss 4.0	27021100
eCl@ss 4.1	27021100
eCl@ss 5.0	27024000
eCl@ss 5.1	27024000

<https://www.phoenixcontact.com/gb/products/2297060>



## Hybrid motor starter - ELR W3-230AC/500AC- 9I - 2297060

### Classifications

#### eCl@ss

eCl@ss 6.0	27024000
eCl@ss 7.0	27024002
eCl@ss 8.0	27024002
eCl@ss 9.0	27370905

#### ETIM

ETIM 2.0	EC001037
ETIM 3.0	EC001037
ETIM 4.0	EC001037
ETIM 5.0	EC001037
ETIM 6.0	EC001037
ETIM 7.0	EC001037

#### UNSPSC

UNSPSC 6.01	30211915
UNSPSC 7.0901	39121514
UNSPSC 11	39121514
UNSPSC 12.01	39121514
UNSPSC 13.2	25173902

### Approvals

#### Approvals

#### Approvals

UL Listed / cUL Listed / GL / GL-SW / UL Listed / IECEE CB Scheme / cUL Listed / CCC / EAC / GL

#### Ex Approvals

ATEX






#### Approval details

UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 228652
-----------	---	---	---------------

cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 228652
------------	---	---	---------------

## Hybrid motor starter - ELR W3-230AC/500AC- 9I - 2297060

### Approvals

GL		<a href="https://approvalfinder.dnvgl.com/">https://approvalfinder.dnvgl.com/</a>	54757-08 HH
GL-SW			54757-08 HH
UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 323771
IECEE CB Scheme		<a href="http://www.iecee.org/">http://www.iecee.org/</a>	DE1-55728
cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 323771
CCC			2016010304871315
EAC			RU C- DE.A*30.B.01082
GL			



# 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](http://www.scatts.co.uk)