



MRO ^{ISSUE} #7 Solutions

SUSTAINABLE TECHNOLOGY

HELPING YOU TO CREATE ENERGY
CONSCIOUS INNOVATIONS



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Supporting you every day, we're by your side



We carry more than 600,000 industrial and electronics products from over 2,500 leading suppliers. From the niche specialists to the big global brands, we stock every brand you're likely to have heard of, and many more besides. This includes our own-brand RS PRO, which offers more than 50,000 products.

With fast and easy access to a broad range of products, reliable delivery, expert technical advice and solutions to streamline your processes, we'll help you keep things running smoothly.



Customer Service

Take advantage of our customer support, technical advice & dedicated account managers.



Competitive Quotes

Local team dedicated to quoting you the best price possible for all your orders.



Flexible Delivery

Free next-working-day available, scheduled deliveries, or plan ahead with advance orders.



Easy Ordering

Order online, by phone, by fax, or on your mobile phone via our easy-to-use website.

From same day delivery to procurement solutions, visit RS Online to connect to a wide range of helpful services to increase productivity, save you time and money.

How can we help you today?

Order Your Way!

- **Online** at au.rs-online.com
- **On the go** with the RS Online mobile site
- **On the phone** at 1300 656 636
- **Email** ozorder@rs-components.com

Customer Services & Technical Support

Mon - Fri (8am - 6pm AEST)
T: 1300 656 636 | F: 1300 656 696
Order & General Support: supportau@rs-components.com
Quotes: quotesandtenders@rs-components.com
Product & Technical Support: oztech@rs-components.com
Credit & Billing Support: creditau@rs-components.com
Payment & Deposit Slips: r.receipts.au@rs-components.com



WELCOME

We can't wait until tomorrow to create a more sustainable world; we need to start making changes now.

Engineers are at the forefront of shaping the world we live in. With responsibility for the design of products from the ground up, including the materials and parts selected, as well as product performance such as power consumption and efficiency, engineers have an opportunity to tackle sustainability issues at source.

In this edition of MRO Solutions, we highlight our wide range of energy-efficient products and sustainable technologies to help you shape tomorrow, today!

Regards,

Scott Philbrook
Managing Director
RS Components ANZ



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Monza Recycled contains 100% recycled fibre and is FSC® Mix Certified, which ensures that pulp is derived from well-managed forests and recycled wood of fibre. Monza Recycled is manufactured by an ISO 14001 certified mill.

WEBINAR 7 APRIL 2022
SUSTAINABLE TECHNOLOGIES

Learn how sustainability is not only at the forefront of product development, but how these products and technologies can help you save energy & wastage.

Join us on the 7th April or watch online after the event for insights from the leading industry experts from Schneider Electric, Fluke, Phoenix Contact, ABB & RS PRO and help your business become more sustainable in its operations.

au.rs-online.com/sustainable-tech



RS CELEBRATES
INTERNATIONAL WOMENS DAY
AND RAISES THOUSANDS FOR LOCAL CHARITY



Colleagues across RS Components joined together on International Women's Day to share why inclusion and equality are important to us.

Together we can forge women's equality. Collectively we can all #BreakTheBias.

RS HELPS TO
STRENGTHEN THE COMMUNITY

RS AUSTRALIA CONTRIBUTES TO SUNCORP STADIUM'S ANNUAL CHRISTMAS LUNCH FOR THE HOMELESS & DISADVANTAGED

For 364 days of the year Suncorp Stadium hosts international sports and music stars from around the country and the world with the 365th day saved for welcoming those less fortunate in the community into the venue for Christmas.

Volunteers from Suncorp Stadium will join Communiify and venue caterers The O'Brien Group Australia to put on a day of Christmas celebrations.

Suncorp Stadium General Manager Alan Graham said the annual lunch is another pillar of the venue's corporate social responsibility.

"Suncorp Stadium is an icon of the Queensland landscape and as such it is our duty to play an active role in supporting and enhancing the local community" he said.

"We are so grateful to the many sponsors who have provided support."

This year, guests will take away Christmas hampers containing life's necessities like toiletry packs, food, blankets, clothing and other essential goods.

“Another huge thank you to our friends over at RS Components Australia for your donation providing more goodies for our takeaway hampers. Our Annual Christmas Day Lunch for the homeless & disadvantaged is only possible with the generosity of companies like RS Components!

- Suncorp Stadium”



Celebrated annually worldwide on March 8, International Women's Day (IWD) is designed to recognise women's achievements and reinforce equality. This year's campaign theme was #BreakTheBias. Colleagues from across the globe came together to celebrate and strike the #breakthebias pose!

Group Head of Diversity and Inclusion, Jessica Chu said: "Celebrating IWD across Electrocomponents today is hugely important so we can recognise the amazing female talent we have in our organisation. It's also a day that reminds us of the work we still need to do to reach our ESG gender target of 40% women on our senior leadership team by 2030. We also need to take the time to recognise the journey we are on to ensure we develop and grow our own pipeline of women,

and additionally, ensure we are attracting and recruiting new diverse female talent."

Thanks to the hard work, kindness and contributions from our ANZ team, we were able to raise over \$1160 for Dress for Success Charity plus clothing donation boxes!

By supporting the Dress for Success Charity Drive, we are helping women to get back into work, reconnecting them to their community and helping them transition into a new chapter in their life. For many of these women, the donation will be a lifeline that helps provide the support they need to overcome the barriers they have faced and to embark upon the path towards financial independence.

#BreakTheBias

ABOUT THE CHARITY

Dress for Success helps underprivileged women looking to re-enter the workforce with modern business attire and support on the job application process.

"At Dress for Success, our core styling service depends on impeccable donated workwear, shoes, and accessories so we can dress our clients to nail that interview and thrive in their new role."





ADVANCING SUSTAINABILITY

Advancing sustainability in our organisation and yours



We are developing sustainable operations and product and service solutions to reduce environmental impacts and tackle climate change.

Electrocomponents is at the heart of the global industrial sector. We provide products and service solutions that help our customers design, build, maintain, improve and protect their equipment and operations. Every day, we help our customers make amazing happen for a better world – from enabling innovative solutions to keeping businesses, critical industries and communities running.

We are committed to being a strong and sustainable business and bringing our people, customers, suppliers and communities together to accelerate our positive impact. We are determined to leverage our global scale and innovative product and service solutions to advance sustainability and improve lives. By doing so, we know we can play a key role in helping to address some of the world's biggest challenges; from tackling climate change, to building engineering and innovation skills and championing diversity and inclusion.

To make this happen, we're introducing For a better world - our 2030 action plan to support a more sustainable and inclusive world. We've set four global goals by 2030 focused on: advancing sustainability; championing education and innovation; empowering our people; and doing business responsibly. Vision & Strategy

Our Progress in Australia & New Zealand

- CO2 performance and energy use ahead of plan due to lower energy use during COVID-19 lockdowns
- Intensity-performance improving supported by strong sales growth
- Waste intensity improving as tonnage is reduced but reductions are in recycled material so % waste recycled is down and % waste to landfill is up.
- Packaging – minor local purchases - weights flat
- Water use down due to working from home

au.rs-online.com/esg

62%

reduction in Scope 1 and 2 emissions



67%

group electricity usage from renewable sources



40%

reduction in waste intensity



22%

reduction in packaging intensity



100%

Australian warehouse lights are now LED





OUR PEOPLE & COMMUNITY

People and innovation are key to driving the change towards a more sustainable and inclusive world.

Our focus is on enabling education and innovation that improve lives and inspire the next generation of engineers. Across our communities worldwide, we are implementing educational initiatives to help students realise the potential of careers in technology and engineering.

We have a strong track record in implementing educational initiatives and we work in collaboration with educational institutions, businesses, industry bodies and governments. We believe that we have a responsibility to enlighten, motivate and excite young people about the career possibilities available in the engineering industry.



Two days paid volunteering

To enable our people to participate in educational initiatives and provide support in their communities, we have introduced two paid volunteering days for all employees. Our people will be able to volunteer for their chosen charitable cause or for our global social commitment, The Washing Machine Project, or for our education partner, Engineers Without Borders-International.



Helping improve the lives of 100,000 people worldwide.

We are supporting The Washing Machine Project with essential funding, products and expertise to deploy at least 7,500 machines to disadvantaged families and communities in 10 countries over the next three years. Some 70% of the world's population does not have access to an electric washing machine and many people have to wash their clothes by hand in rivers, lakes and buckets. Handwashing

is predominantly left to women and girls, forcing them to spend up to 20 hours per week on this task causing severe back and joint pain and painful skin irritation, as well as preventing the chance of an education.

The Washing Machine Project has built an affordable, easy to maintain, manual crank washing machine, requiring no electricity, using 50% less water than handwashing and reducing the time spent on this task by 75%.

Together, our goal is to improve the lives of 100,000 people by offering them better health, education and economic opportunities.

Find out more at:

electrocomponents.com/esg



Partnering with Engineers Without Borders

We are proud to announce our partnership with Engineers Without Borders Australia, and their School Outreach program designed to inspire students from diverse backgrounds to create a better world through engineering. The EWB and RS partnership aims to not only inspire STEM, but strengthen relationships with First Nations communities, as well as contribute to initiatives that increase cultural understanding, the access of First Nations Australians to appropriate technology, and strengthen their career opportunities within the engineering sector.

EWB began in Melbourne in 2003 with a small group of engineers dedicated to harnessing the potential of engineering to create an equitable reality for the planet and its people. Today, the EWB community includes thousands of people and dozens of organisations working together to engineer a better world.

EWB began in Melbourne in 2003 with a small group of engineers dedicated to harnessing the potential of engineering to create an equitable reality for the planet and its people. Today, the EWB community includes thousands of people and dozens of organisations working together to engineer a better world.

The EWB partnership is a significant step in our commitment as a business to create long standing ties with the ATSI community.

We also have a Global partnership with Engineers Without Borders-International to involve 20,000 students in engineering design challenges that address global issues

We recognise the need to tackle the skills gap and support the next generation of engineers who will shape our future world. We are supporting 20,000 engineering students from Australia, South Africa, UK and US who participate in the Engineers Without Borders annual competition, Engineering for People Design Challenge.

Find out more at:

au.rs-online.com/ewb



Our Solutions

Our solutions support you across the product lifecycle through design, build and maintain.

We can also give you advice on flexible delivery options, cost-saving ways to help you manage your inventory and procurement, through to preventative maintenance and eCommerce solutions.



Product Support

- We offer easy access to product support resources online or by phone.
- Our Customer Services team can help understand your needs offering product support or directing your enquiry to a qualified engineer.
- Speak to a live chat member on our website for help in finding products or other technical information.
- Or take a look at our technical data sheets which are available at product level. This can help save time, allowing you access to technical information 24/7.



Delivery and Invoice Options

With a range of flexible delivery and invoicing options all designed to suit you

- From same day to next working day to call off and consolidated delivery, we've a range of flexible delivery options to suit you.
- Stay in control of your spend and reduce your purchase to pay costs with our invoicing and payment services.



Calibration

The RS calibration service maintains compliance across a wide range of assets to international standards.

- From thermometry to test meters and measuring devices, you can be confident your equipment is compliant.
- Buy new, calibrated, ready-to-use equipment or, request recalibration of your own products with a fast turnaround and delivery.
- ISO9001:2015 Standard or NATA-accredited laboratory
- Have full traceability of your equipment's conformity for audit purposes.



Procurement Solutions

We have different solutions to help you manage your RS orders. From simple web tools to integrated eProcurement solutions.

Our procurement solutions support customers with complex needs to drive vendor consolidation, reduce costs, improve productivity and deliver innovation.

Product Plus

RS Product Plus is an exclusive service for customers looking to consolidate their spend. Our specialist team can support your requirements and help you source products not published on our website.

Using our expertise and relationships with over 2,500 key manufacturers, we provide access to over a million products. We will also let you know if we find an alternative product offering extract functionality or value for money benefits.

- **Consolidate your vendors:** saving time managing multiple suppliers and reducing purchase-to-pay costs
- **Leverage your spend:** by placing your orders with fewer suppliers
- **Save time and speed up sourcing:** as there's no need for your teams to search and negotiate with multiple suppliers



eCommerce Solutions

For a more efficient process for your industrial and electronics product procurement, we have a service to fit your business requirements. From web-based and mobile ordering through to integrated procurement solutions.

PurchasingManager™

A free web order management solution that helps you manage your spend, whilst providing visibility of orders placed through the RS website.

PunchOut

Integrated into your own eProcurement system, providing fast and easy access to our full product range and purchase information.

eOrdering

Fast and secure ordering direct from your system to ours. Improves accuracy by eliminating order and invoicing errors.

eInvoicing

Fast and secure invoicing direct from our system to yours. Eliminates paper, whilst saving you time and money in administration processes.



Learn more at au.rs-online.com/services or contact our team



SMART SEMICONDUCTORS FOR ENERGY-EFFICIENT INDUSTRIAL AUTOMATION

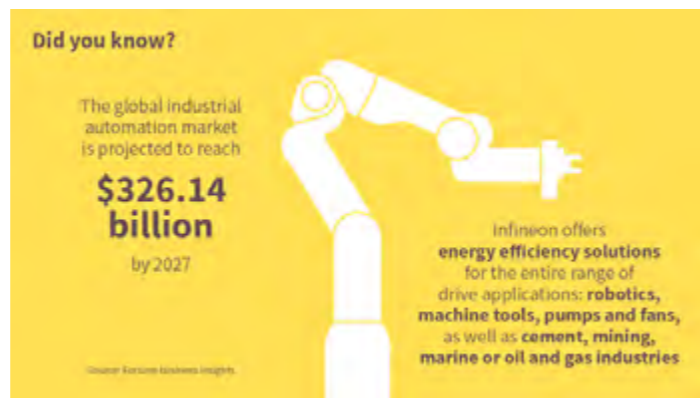
Industrial automation is leading the way to the fourth industrial revolution, also known as Industry 4.0. It is the essential driver for efficiency in global productivity; a growing number of smart factories all over the world increasingly rely on automation. At its core, industrial automation helps companies use all resources for manufacturing and other value-generating processes as efficiently as possible – from base materials to energy.

Big Data analytics lets manufacturers not only continuously improve their products and processes, but also lets them develop new services such as predictive maintenance and automated software updates. Smart semiconductor solutions are the essential gatekeepers for these developments and innovations. At many automation touchpoints they ensure efficient and secure data flow, control the speed of industrial motors and facilitate unexpected gains in overall flexibility.

INDUSTRIAL AUTOMATION RELIES ON ALL KINDS OF SEMICONDUCTORS

Successful industrial automation is linked to powerful, secure and smart components. Looking at typical applications, industrial automation ranges from simple thermostats in single devices to large industrial control systems which include tens of thousands of input measurements and output control signals. They also include sensors, isolated interfaces for sampling measurement data, control applications in remote clients, classic PLCs (Programmable Logic Controllers) and other edge-control elements to the cloud for processing data.

There are power semiconductors such as IGBTs and MOSFETs, gate drivers and dedicated controllers in the field of motion control and robotics. While fully focusing this portfolio on the efficient use of energy, Infineon can address the entire range of applications including robotics, machine tools, pumps, fans and high-power drives, and can enable more while using less.



BROAD PORTFOLIO FOR OPTIMIZED EFFICIENCY

Infineon power semiconductors connect the real and the digital world in the industrial space at the highest possible energy levels and reduce energy losses in all applications. For example, power semiconductors and related gate drivers from Infineon control the variable speed of industrial motors. Sensors measure motor speed as well as the environmental and internal conditions of a machine. Isolated interfaces operate systems in high-voltage domains, interacting e.g. with motors and low-voltage domains where controllers perform safe system operations. There are microcontrollers that perform control algorithms or AI to operate machines. Furthermore, there are connectivity devices in the area of Wi-Fi® and Bluetooth® for the Industrial Internet of Things as well as security devices which guarantee safe operation restricted to authorized users only and use of only properly certified original system elements.



INFINEON - FOR AN ENERGY SMART WORLD



Infineon CoolSiC™ 1200 V, 45 mΩ SiC MOSFET

- Best in class switching and conduction losses
- Benchmark high threshold voltage, $V_{th} > 4$ V
- 0V turn-off gate voltage for easy and simple gate drive
- Wide gate-source voltage range
- Robust and low loss body diode rated for hard commutation



222-4865	52 A, 1200 V	IMZ120R045M1XKSA1
222-4867	26 A, 1200 V	IMZ120R090M1HXKSA1
222-4868	19 A, 1200 V, (Tube of 30)	IMZ120R140M1HXKSA1
222-4872	4.7 A, 1200 V, (Tube of 30)	IMZ120R350M1HXKSA1

Infineon EiceDRIVER™ Isolated Gate Driver

- Single channel isolated gate driver
- For use with 600 V/650 V/1200 V/1700 V/2300 V IGBTs, Si and SiC MOSFETs
- Up to 14.0 A typical peak output current
- 40 V absolute maximum output supply voltage



228-6505	13.5 A, 35V 8-Pin (Pack of 5)	1ED3124MU12FXUMA1
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Bridgeless Totem-Pole PFC Evaluation Board

- High efficiency bridgeless totem-pole PFC
- Perfect for high efficiency applications (close to 99%)
- Bidirectional operation (digital control)
- High power density
- Enabled by CoolSiC™ MOSFET 650V

214-1996	PFC Controller
-----------------	----------------

thinQ! Silicon Carbide (SiC) Schottky Diode

- The Infineon thinQ!™ Generation 5 offers a new thin wafer technology for SiC Schottky Barrier diodes improving the thermal characteristics
- The SiC Schottky Diode devices offer advantageous high voltage power semiconductor features such as higher breakdown field strength and improved thermal conductivity allowing greater efficiency levels



133-9945	1200V 56A	IDH20G120C5XKSA1
133-9852	1200V 11.8A (Pack of 2)	IDH02G120C5XKSA1

Evaluation Board For EiceDRIVER

- The Infineon's evaluation board is in half-bridge configuration with two-level slew-rate control enabled gate driver ICs 1ED3241MC12H
- This board enables the evaluation of the slew-rate control switching scheme. The switch type can be freely chosen



232-5724	Evaluation Board	EVAL1ED3241MC12HTOBO1
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214-1996	PFC Controller	EVAL3K3WTPPFCISICTOBO1
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Data-Logging Memory

- Nonvolatile Ferroelectric RAM Memory
- Fast write speed
- High endurance
- Low power consumption



124-2933	4Mbit SPI FRAM Memory 8-Pin SOIC	CY15B104Q-SXI	124-4406	Single Unit	CYBLE-01201-00
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CYBLE-01201*-x0 EZ-BLE Bluetooth Module

- The CYBLE-01201*-x0 module contains all the necessary components to add low-power Bluetooth BLE wireless connectivity to a project design
- It includes a royalty-free BLE stack compatible with the Bluetooth 4.1 standard



Wi-Fi Antennas with Cable

- With a micro-coaxial cable, both antennas ensure that you have a consistent and fast Wi-Fi connection for use with your devices.
- The Wi-Fi antennas are ideal for use within applications such as Machine to Machine communication (M2M), smartmeters, Industrial, Scientific & Medical (ISM) band systems, cameras, navigation devices, mobile gaming devices and ZigBee IEEE 802.15.4 devices



molex

907-6510	4G (LTE), WiFi (Dual Band)	146153-0250
904-8231	Bluetooth (BLE), WiFi (Pack of 2)	47950-0011
907-6517	4G (LTE), WiFi (Dual Band)	146153-0100

MAX44284 - Low-Power Current-Sense Amplifier

- Supports Use of Small Current-Sense Resistors to Improve Power
- Supply Conversion Efficiency and Measurement Accuracy
- Input Bias Current of 80nA (max)
- Very Low 2µV Input Offset Voltage (MAX44284F/H)



190-6395	H version (pack of 5)	MAX44284HAUT+T	177-3305	Push-Pull O/P, 12µs 5-Pin SC-70 (Pack of 5)	CY15B104Q-SXI
190-6383	F version (pack of 5)	MAX44284FAUT+T			

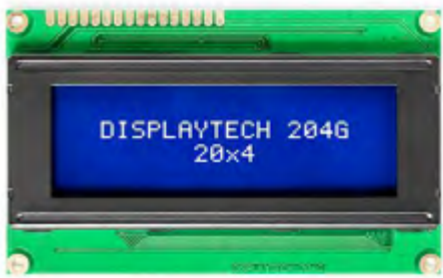
Comparator & Voltage Reference

- 1.5V to 5.5V operating range
- 1.5µA typical supply current
- ±1.25% voltage threshold accuracy
- 10nA maximum input leakage current over temperature
- 10µs propagation delay
- Externally adjustable hysteresis (MIC841)



Displaytech 204G series LCD Display

- The Displaytech 204G series is a STN transmissive type LCD display which has supply voltage of typically 4.2 V
- It has dot size of 0.55 X 0.55 mm and dot pitch of 0.60 X 0.60 mm
- It has low power consumption and cost effective.



Displaytech Ltd

210-9046	Yellow-Green on, Transmissive	204G CC BC-3LP
210-9040	Yellow-Green on, 2 × 16 Characters, Transflective	202G BC BW
210-9038	White on, Transflective	164G FC BW-3LP
210-9035	White on, 2 × 16 Characters, Transflective	162M FC BC-3LP

TEC Flex Protect Shortpitch 300 Pre-wired LED strips

- Simple and quick plug-and-play installation
- Easy mounting on many smooth surfaces thanks to self-adhesive tape at the back
- Flexible and cuttable LED strip
- Recommended in system use with OPTOTRONIC



OSRAM

210-1538	White, 5000mm	TF1500S-G1-865-05
210-1535	White, 500mm	TF1500S-G1-827-05
210-1536	White, 5000mm	TF1500S-G1-840-05

OSCONIQ S 5050 Horti LED

- The ideal white LED that enables luminaires to maximize system level photon efficacy performance for horticulture applications
- Unlike conventional white LEDs, OSRAM's Horti White LEDs utilizes a customized phosphor solution designed to facilitate the increase of on-converted red photons to deliver superior fixture level efficacy



OSRAM

223-0928	(Pack of 10)	GW Q9LR32.HW-AEAF-M2-1-180-R18
223-0926	(Pack of 10)	GW Q9LR32.HW-AEAF-M1-1-180-R18
223-0930	(Pack of 10)	GW Q9LR32.HW-AEAF-M3-1-180-R18



Solar Charge Regulator
Steca PR

- Hybrid controller
- State of charge determination with Steca AtonIC (SOC)
- Automatic detection of voltage
- PWM control
- Multistage charging technology



860-2887 20A solar charge controller

PR 2020

RS PRO 5wp Solar Panel
Kit Bulk Pack

- High-efficiency crystalline cell for "all-weather" charging
- Perfect for battery maintenance and off-grid lighting projects
- Water resistant, robust construction for outdoor use
- Inbuilt diode protects against battery discharge



904-6128 5W Polycrystalline solar panel

Solar Panel Connector

- IP67 connectors designed to meet the stringent requirement of Photovoltaic installations
- Equipped MC-Multilams on the plugs make a very low contact resistant
- Central fixing hole for tying to structure.



560-947	Female to Male, CSA, 2.5 → 4.0mm², Rated At 30A, 1kV	32.0018+32.0019
560-997	Male, CSA, 4 → 6mm², Rated At 30A, 1kV (Pack of 5)	32.0017P0001
560-975	Female, CSA, 4 → 6mm², Rated At 30A, 1kV (Pack f 5)	32.0016P0001

RS PRO ±1% Photovoltaic
Cell Analyser

- Current and voltage accuracy of ±1%
- Voltage measurement range of 0 to 60 V DC
- Current measurement range of 0.01 to 6 A
- Operating temperature range of 0°C to +50°C
- Dimensions of 155 (length) x 57 (width) x 257 mm (height)



123-2205 Rechargeable Li-Ion Battery 12A 60V dc

Solar Technology 80W Kit
Renewable Energy Kit

- High efficiency crystalline cell for "all weather" charging
- Dimensions: 1196×542×35mm
- Weight: 7.8kg
- Amps/day: up to 35-84
- Amps/Hr: 5.12



769-4233 80W

STP080MA

RENEWABLE ENERGY
TECHNOLOGY

ADVANTAGES AND DISADVANTAGES OF USING RENEWABLE ENERGY

THE BACKGROUND

By definition, renewable energy comes from processes or sources that are continually being replenished. These include, for example, solar, wind, geothermal and hydropower.

Renewable resources are virtually inexhaustible in the long term but are limited in terms of the amount of energy generated per unit of time.

These sources are frequently considered to be green or clean energy, although there are major differences. Renewable energy sources are recyclable and clean energy doesn't release pollutants such as carbon dioxide into the atmosphere. Green energy originates from natural sources.

However, not all types of renewable energy are entirely green or clean. For instance, hydropower plants can cause deforestation and damage natural habitats.

ADVANTAGES &
DISADVANTGES OF
RENEWABLE ENERGY

Renewable energy sources will not be exhausted, at least not for many millions of years. They provide a viable alternative to non-renewable resources, such as fossil fuels. Many are also environmentally friendly and do not produce CO2.

All types of renewable energy technology have advantages and disadvantages, frequently relating to supply, which means the best solution is often to combine different types.

Alternative Energy Benefits

- Renewable energy provides a number of advantages, including readily available energy sources.
 - As the industry has advanced, there has also been a surge in job creation, to install and develop the state-of-the-art renewable energy technology of the future. Renewables also offer improved access to energy on a global scale and may also reduce the cost of utility bills.
 - One of renewable energy's major advantages is that it is mostly clean and green - especially solar and wind power.
 - The effectiveness of renewables depends on the energy resource used. Some renewable sources are more readily available and effective while others, such as geothermal, are only accessible in certain locations.
 - In general, renewable energy has the potential to reduce electricity sector emissions by around 80%.
- Renewable Energy Disadvantages**
- Renewable energy sources can't be relied upon. Solar power can't be generated at night or on cloudy days, and on still days, there is insufficient wind to generate power. This is one of the reasons why fossil fuels like natural gas are still used in many countries.
 - Another option is to combine multiple renewable technologies, creating a more robust and flexible supply system, which

can counteract production shortfalls for a single source.

- Some renewable resources, such as biomass and hydropower, don't have these problems. However, both have their own issues in terms of environmental impact
- In addition, some renewable energy sources, like solar and wind farms, are not popular with local residents who don't want them installed near their homes.

IN CONCLUSION

Renewable energy can play an important role in reducing greenhouse gas emissions and combatting climate change.

It can also help reduce the need to import energy and use fossil fuels which are currently the main source of carbon dioxide emissions.

Renewable energy looks set to be a major part of future energy provision, alongside other clean sources such as nuclear energy.

The shift towards a greener future for power generation is driving a rise in job creation in renewable energy industries such as solar and wind power.

Even if the main issue with renewables is linked to supply, with reliable supplies and fuel diversification, renewable energy could meet our energy needs in the years to come.

Discover our range of Renewable Energy Products and learn how energy-conscious innovations can help you design smarter solutions today, for our world's tomorrow at

au.rs-online.com/sustainable-tech



ACTIVIST ENGINEERING ENGINEERING FOR A BETTER WORLD

Engineers have been at the forefront of shaping the world we live in. There's evidence all over our planet showing how early civilisations fashioned basic tools to build things to make life better, one of the most significant examples is The Great Pyramids. Built around 5000 years ago, these are still visible today! These days things aren't quite "built to last", with perhaps the exception of the Nokia 3110, where urban myth says that it would still likely power up after being buried in the sand for 5 Millenia!

Although the profession of engineering emerged in the 1500s, it wasn't until The First Industrial revolution in 1765 where the age of steam power led to mechanized production. The Second Industrial Revolution brought us Electricity in 1870 and the Third in 1969 brought us computing and the beginning of space exploration. We now find ourselves in the dawn of Industry 4.0, where Smart connected factories will transform manufacturing to be more efficient.

#ActivistEngineering

Although Engineering has shaped the way we live and work, it's also contributed to many of the environmental

challenges we are living with today. Our hunger for the latest technologies has created a throwaway economy with many of our personal effects and gadgets having a much shorter lifespan than days gone by. Much of this sadly ends up in a landfill earlier than it needs to, either due to low quality or obsolescence.

Cop 26 ran during the first two weeks of November 2021 in Glasgow, Scotland. World leaders assembled to address how together we can tackle the problems that are damaging the planet and the health of its inhabitants. If we don't work together and don't act now, it may be too late to repair the damage.

As Engineers, we play a key role in society. The products and technologies we develop can directly affect people's lives and wellbeing, as well as the health of our planet.

At DesignSpark we reach and engage with millions of engineers from around the world, we work with world-leading manufactures of technologies that are the building blocks for engineers. To help us all on an engineering journey that makes a difference to the world we live in, we want

to help educate and influence engineering responsibility to all generations of engineers, so that together we can all be "Activist Engineers"

Sustainability is becoming high on the agenda for companies as well as individuals, and we all need to play our part in looking after the environment and its inhabitants. As Engineers, we can make a real difference in the way that products are being designed. From conception, ensuring that that we are designing products to last longer and use fewer components and materials, as well as being more aware of what happens to them once they have reached their end of life.

Can products be re-used, recycled, or more easily repaired? Are they using precious natural resources that end up in landfills across the world? We want you to join us and influence how design through #ActivistEngineering commits engineers to step back and ask how they can create engineering outcomes that have a more positive impact on the world around us.

Sustainability by design

We all read every day the impact we are having on the



world around us, we all have a responsibility to make a change no matter how small that is, is there something that we could be doing but are not doing today? How can we as engineers make a difference and become active participants? By taking direct action and influencing those around us to also make a change we can become influencers for #ActivistEngineering.

We want to celebrate the role that design engineers play in solving sustainability challenges and enhancing the wellbeing of those less fortunate. How are you innovating to create fresh solutions to address current environmental issues? What can you do to make a difference or

it might be that you are already doing something?

With the introduction of new legislation and the push politically to become Net Zero, we will all be impacted by these changes in how we live and how we as consumers come to view products and how these impact the environment around us. What will this journey look like from where are today to a world where the earth's resources become more limited, and we become less reliant upon fossil fuels for energy.

Do we all know where the raw materials come from for the products being designed and how far do they travel, how

much energy do we need to manufacture them and what are the waste products?

We need to consider the whole-life impact of our designs.

For the most impact, all design processes will need to be considered as we move forward. We need to change from being a throwaway society and we need to enact change through design to change this. What are your thoughts, how can we help, what can our suppliers do to enable this change to happen and happen faster, please tell us! We want you to share your thoughts and stories on DesignSpark.com and across social media platforms - #ActivistEngineering

MOVING AWAY FROM A CENTRALISED ENERGY INFRASTRUCTURE

Our relationship with energy is under the spotlight as the effects of climate change are felt around the world. With the global population expected to reach 10 billion by the middle of this century, we must question our ever-increasing appetite for energy. New technology will be key to providing solutions that will help to reduce our impact on the environment.

Over 60% of the electricity produced globally is generated by the burning of fossil fuels. This number increases to over 80% if we include the energy created for heating and transportation. The energy industry is embracing alternative technologies such as solar and wind power to counter this dependence and help reverse our impact on the environment.

There are exciting new technologies that are reducing our need for a large, centralised energy infrastructure. Microgeneration, whether using familiar solutions such as wind and solar or newer alternatives such as biomass-fuelled power plants, is allowing many of us to generate power locally and take control of our own energy needs.

Local power generation will reduce the homeowner's reliance on energy provided by the traditional power grid. New energy storage solutions will allow the homeowner to manage their own energy supply. The growth of

electric vehicles will also play an important role, with their large storage capacity linked into an integrated energy management network.

From these new technologies has emerged the idea of New Energy, which encompasses not just clean sources but an integrated solution for the creation, storage, and transfer of power. The home itself will play a central role in the future of our energy needs, as we will no longer play a passive role in the energy market. The latest power management solutions will provide clean energy along with seamless control, allowing us to monitor our usage at the touch of a screen.

TE Connectivity has years of experience in providing components for the alternative energy market. Harnessing this expertise, TE Connectivity now offers a comprehensive range of energy management solutions that will help power the home of tomorrow. Take a look at the latest solutions available from RS Components.



STOCK NO	DESCRIPTION	MPN
185-9664	T9V SERIES PCB RELAY	2027395-5
220-5072	IHVA200 SERIES HIGH VOLTAGE CONTACTOR	1-2071499-1
190-2027	2270024-1 SOLARLOK PV4-S SERIES (PACK OF 5)	2270024-1
190-2029	2270025-1 SOLARLOK PV4-S SERIES (PACK OF 5)	2270025-1
192-0164	HEAVY DUTY CONNECTORS, 6 POSITIONS	T2040062201-000
192-0102	HEAVY DUTY CONNECTORS, 10 POSITIONS	T2040102201-000
192-0116	HEAVY DUTY CONNECTORS, 24 POSITIONS	T2040242101-000
205-0060	INTERCONTEC CONNECTORS, 8 PINS	BEGA121NN00000100000
205-0045	INTERCONTEC CONNECTORS, 12 PINS	AKUA020NN00090200000
205-0044	INTERCONTEC CONNECTORS, 12 PINS	AKUA020NN00410240000
205-0046	INTERCONTEC CONNECTORS, 17 PINS	AEGA139NN00000201000

SOLARLOK PV4-S connector kit

- Provides waterproof protection
- Minimizes power loss by providing low contact resistance



(Pack of 5)

2270025-1

EPM-5001 Series SMT Optical Detector Assembly

- Fast Response
- Matched to 660nm Emitter
- High Efficiency
- Clear Epoxy Lens



197-5282 8.07mm²

10104019-20

DT Series Automotive Connectors

- Designed for cable to cable connections, and when mated is sealed to a high degree of environmental protection
- Safe, versatile and reliable, DT plug connectors are ideal for automotive applications



425-692 2 Way Plug Connector

DT062S-CE06

425-682 3 Way Socket Connector

DT063S-CE06

CGAT Adhesive lined 3:1 Heat Shrink Tubing

- High strength bonding
- Moisture proof
- Flame retarded jacket
- Environmental sealing



157-3818 12mm

CGAT-12/4-0

157-3824 18mm

CGAT-18/6-0

157-3903 24mm

CGAT-24/8-0

Universal Crimp Tool

- From Deutsch, this universal hand crimp tool has an eight-indent crimp designed to be used with solid contacts sizes 12, 16 and 20
- Used with both pin and socket contacts, the crimp tool features a simple screw adjustment for height/contact size, and a dial to select applicable wire sizes



425-973 20AWG to 12AWG

HDT48-00



Tri-rated Cable - 4 mm² CSA, 1 kV, 41 A

- High quality range of Tri Rated cables
- Voltage rating of 600 / 1000 V
- Class 5 flexibility
- A HR PVC (Heat Resistant PVC) insulation enabling the cable to be used in high temperature applications



811-1442	Black (100 metre reel)
906-2713	Dark Blue (100 metre reel)
815-8611	Pink (100 metre reel)
811-1454	Yellow (100 metre reel)

RS PRO Power Cords

- From RS Pro a high quality and durable range of power cords for connecting an appliance to a mains power supply



321-168	Unterminated to AS/NZS 3112, 2.5M
321-219	C19, IEC to C20, IEC, 2M
445-740	C14, IEC to C14, IEC, 5M

RS PRO OM1 Multi Mode Fibre Optic Cable

- The RS Pro multimode, fibre optic cable has a straight tip (ST) to straight tip (ST) connector with a twist lock coupling that are easy to insert and remove
- The low smoke zero halogen (LSZH) cables come in OM1 and OM 2 which both work well with LED based equipment
- Available in Simplex and Duplex configurations
- Polished ceramic ferrules



535-7395	62.5/125µm, Orange, 2m
535-7430	62.5/125µm, Orange, 10m
738-8492	62.5/125µm, Orange, 20m

SY Control Cable

- Galvanised steel wire braided flexible control cable designed for measuring, control or regulation under tough mechanical stresses
- For installations where free movement is required without tensile stresses
- Examples shown are 1.0mm². Other CSAs available from 0.75mm² to 6mm², all supplied on 50m reels (100m reel options coming soon)

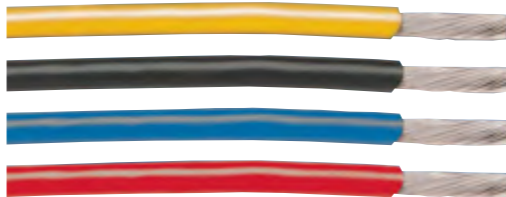


196-4657	2 core
196-4692	3 core
196-4683	4 core
196-4682	5 core
196-4685	7 core
196-4704	12 core



EcoWire Plus

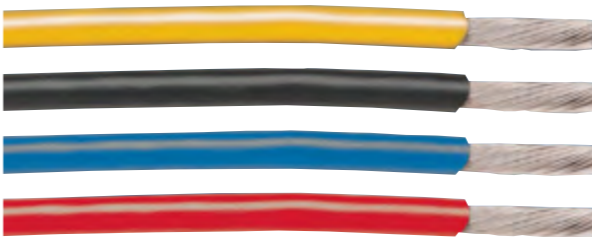
- EcoWire Plus offers all of the environmental benefits of standard EcoWire such as being smaller and lighter than PVC alternatives, plus additional fluid and chemical resistance
- Up to 45% smaller and 40% lighter than XLPE
- Rated from -40°C to +110°C at 300 V
- Meets ISO 6772 for oil and hazardous fluid resistance
- Supplied on 30m reels. Examples shown. Full range available on the RS website



749-5288	0.08mm² black	6820 BK005
749-5301	0.08mm² red	6820 RD005
749-5310	0.08mm² white	6820 WH005
749-5317	0.13mm² black	6821 BK005
749-5373	0.33mm² black	6823 BK005
749-5395	0.33mm² red	6823 RD005

Metric EcoWire®

- Metric EcoWire® saves space in your critical applications where space is at a premium
- Zero-halogen, no phthalates or heavy metals
- 600V cable that is 45% smaller and 40% lighter
- Examples shown. Full range available on the RS website



201-2704	0.25mm² black 100m	67025 BK033
201-2731	0.25mm² red 100m	67025 RD033
201-2740	0.5mm² black 50m	67050 BK321
201-2761	0.75mm² black 50m	67075 BK321
201-2663	1mm² black 50m	67010 BK321
201-2689	1mm² red 50m	67010 RD321

ÖLFLEX® Servo FD 796 CP

- Highly flexible screened servo cable with PUR outer sheath.
- Extended line performance - long travel lengths or high acceleration.
- 600-1000V rated with a temperature range from -40°C to +90°C



800-3221	3C+E 1.5mm + 2×(2×0.75mm)	0027969
800-3192	3C+E 1.5mm + (2×1.5mm)	0027959
800-3195	3C+E 2.5mm + (2×1.5mm)	0027960

T1 Tw1ster Industrial Single Pair Ethernet (SPE)

- Robust two-wire Ethernet communication – reduces weight & cost for industrial applications
- Up to 1000m reach with 10Mbit/s data performance and PoDL functionality – reduces system complexity
- Barrier-free communication from shop floor to Cloud computing – simplifies design and implementation



203-9051	Industrial angled jack	09452812800333
203-9053	0.5m cable assembly	33280101001005
203-9054	1m cable assembly	33280101001010
203-9055	2m cable assembly	33280101001020
203-9057	5m cable assembly	33280101001050
203-9062	10m cable assembly	09456002004
203-9063	50m cable assembly	09456002003

ix-Industrial®

- RJ45 performance in 70% less space – reduced PCB real-estate, increased stacking density
- Positive snap-in mating feature – robust metal construction provides effective audio confirmation of connection
- 5-point PCB THR hold-down contacts – high retention force & excellent shock/vibration performance



178-4192	Type B, solder termination	09451819000XL
178-4193	Type B, IDC termination	09451819001XL
178-4195	Female PCB connector	09452819000333
178-4180	Type A, solder termination	09451812560XL
178-4182	Type A, IDC termination	09451812561XL
178-4184	1m cable assembly	09482612749010

Han®1A Heavy Duty Power Connectors

- Lightweight IP65 robust plastic housing & inserts – 30% smaller than full metal system
- Easy to use locking system – quick and easy click & mate design
- Modular design - power, signal & data options within the same housing




188-1487	Locking lever	09100005200
188-1488	Housing, straight	09100000300
188-1489	Housing, angled	09100000800
188-1491	Strain relief	09100005300
188-1493	Cable adapter	09100000400

Buccaneer Standard Sealed Power Connectors

- IP68
- UL94HB Housing
- Insulation Resistance of >104 MΩ @ 500 V dc




 275-5342	Screw terminal plug	PX0745/P
275-5364	Screw terminal socket	PX0745/S
275-5392	Inline coupler plug	PX0746/P
275-5409	Inline coupler socket	PX0746/S

CoolSplice Connectors Reduce Wiring Time


- Time saving splice connectors using IDC connection technology - no wire stripping needed!
- Push button operation for ease of installation with industry proven reliability



 130-0889	2 × 1.5-2.5mm²	2213600-1
130-0891	1× 0.75-1.5mm² / 1× 1.5-2.5mm²	2213600-3
130-0890	1× 0.75-2.5mm² / 1× 1.5-4mm²	2213600-2
161-4013	2 × 1.5-2.5mm², box of 39	2213600-1

PTFIX Distribution Blocks

- Distribution blocks using time-saving, tool-free push-in direct connection technology
- Compact design enables space savings of up to 50% as well as simpler wiring
- Available with 6, 12, and 18 terminal points, with various mounting options, and eleven colours for clear, intuitive, and safe installation

 136-3231	6X2,5-NS35 Grey	3273000
136-3232	12X2,5-NS35 Grey	3273022
136-3233	18X2,5-NS35 Grey	3273044
136-3240	6/6X2,5-NS35 Grey	3273066
136-3241	6/12X2,5-NS35 Grey	3273088
136-3242	6/18X2,5-NS35 Grey	3273110





Push-in Technology[®]

Designed by PHOENIX CONTACT



Simply unpack, connect and you're done

PTFIX distribution blocks
Save time and space in potential distribution with the ready-to-connect Push-in distribution blocks. The blocks are available with various cross sections, numbers of positions, mounting methods, and colors. They are ready for immediate use and can be extended as needed.

To learn more visit the RS website and search for "PTFIX"



WHY SUSTAINABILITY MATTERS IN THE MIDST OF SUPPLY CHAIN DISRUPTIONS

The year 2021 has seen one of the greatest disruptions to supply chains, with the entire industry being put through a stress test while also dealing with rising fuel costs. In addition to these disruptions, the threat of climate change due to rising emissions and its catastrophic impacts was emphasised during the COP26 held in Glasgow. After all, the supply chain industry alone accounts for more than 50 percent of annual greenhouse gas emissions. The sense of urgency surrounding climate change has pushed consumers to expect more from their suppliers, with mounting pressure from companies' stakeholders for companies to embrace sustainable solutions across their businesses. Fortunately, supply chains are still focusing heavily on their sustainability efforts, despite the disruption and rising fuel costs.

COVID – a hindrance to sustainability efforts

Supply chain resilience is not novel and has been a topic of discussion by many. The supply chain industry has weathered through many unprecedented events, and several decades of experience have taught many in the field to buffer stocks, and adopt a just in time sourcing model to reduce inventory levels. However, no one could have predicted the effects COVID-19 pandemic had on supply chains. For the first time ever, the stress on supply chains was unparalleled to what years of experience had taught us. Shortages from raw materials to cars are reaching historic levels. Instead of organizations being focused on implementing sustainable practices, they were forced to turn their attention to procuring enough inventory.

How technology can help drive sustainability

With each passing year, technology becomes more advanced. Together with Industry 4.0, technology can be used to aid sustainability efforts in the manufacturing industry. For example, manufacturers can invest and integrate green technology when rebuilding or restoring machines. This extends machine productivity and use, while lowering the carbon footprint. Other emerging technologies such as AI are now being used widely across the board, and have the potential to transform manual repetitive tasks into highly automated processes. Smart manufacturing also enables manufacturers to create accurate and detailed production plans and helps manufacturers predict failure and monitor product defects. However, it is not a one-way street. When making the

shift to technology, it's important for manufacturers to ensure their suppliers and business partners are also on the same page, sharing the commitment to sustainability and having the capabilities to support them in their green mission.

For example, at RS, we have adopted eProcurement solutions such as RS Purchasing Manager and Product Plus. RS' eProcurement solution allows users greater control over their procurement and purchasing processes. The solution gives businesses full visibility into their spending, and accurate purchasing data. Thus, this ensures minimal errors during procurement and maximum Purchase to Pay process at cost reductions. Such solutions increase procurement efficiency, reduce costs, and leads to less wastage. Some other processes include predictive maintenance. Adopting this technology, it allows us to push supply chains towards further transparency and sustainability. Manufacturers can get full visibility into energy consumption across operations, be able to look out for equipment reliability and maintenance, and ensure that energy is efficiently utilised.

Net Zero Supply Chains

Fortunately, the commitment to tackling climate change is accelerating in all sectors of society. However, one of the ways we could accelerate the goal of achieving a net-zero supply chain is by decarbonizing supply chains. With as many as 1,400 companies pledging to reach net-zero by 2050, it is a must to adopt for manufacturers. Furthermore, it has become mandatory to meet tightening regulatory sustainability requirements and this move has compelled manufacturers to optimize their supply chains.

Some climate leading companies

have introduced low-carbon governance into their business models. This includes embedding carbon reduction considerations into product development, procurement, finance and so forth, so those management incentives are aligned around them. Some have also chosen to redesign products. For example, creating a closed-loop system that increases the number of recycled materials — a strategy increasingly embraced by electronics companies including Dell Technologies and HP Inc. Swapping out one material or component for another is also another method, as Unilever is prioritizing with its cleaning products.

Other tactics include calculating an emissions baseline and moving to share data with suppliers. Siemens, for example, is collaborating on a pilot program to measure emissions for a washing machine along the entire supply chain. Lastly, they have also set targets that "cascade" net-zero emissions ambitions down to their suppliers. Manufacturers are also seeking out environmentally responsible suppliers. They are also encouraging suppliers to set science-based reduction commitments – or require them to adhere to the targets based on the pledge.

How will the increased scrutiny from central banks and banks drive sustainability efforts across the industry?

According to an article published by South China Morning Post, a past survey shows that 91 percent of global consumers expect businesses to address social and environmental issues, and 90 percent of them would boycott a company if it were engaged in irresponsible business practices. There is a clear distinction between brands that are actualizing supply chain sustainability and brands

that are marketing supply chain sustainability. A truly green supply chain is a supply chain that implements strategies and actions to improve performance in areas that are not eco-friendly or in this case, sustainable.

Governments are also increasingly aware of the dangers of climate change and many have resorted to allocating funds for sustainability projects. However, this is where greenwashing could potentially be on the rise. Stocks and funds highly rated on environmental, social and governance metrics have attracted trillions of dollars of investments in recent years. With the increased scrutiny, this means that companies will now have to actualize supply chain sustainability, instead of marketing supply chain sustainability.

It is increasingly evident that the supply chain industry will be going through massive changes in the upcoming years. Organizations will need to take a smarter approach to procurement, facilitate collaboration, and access actionable insights to drive continuous improvement and help reduce carbon emissions. In order for us to reduce carbon emissions, we will have to adapt to these changes and fortunately for us, technology is here to help us tide this through.



ARTICLE BY
SUOOR ANWAR
VP APAC, STRATEGY & COMMERCIAL
RS COMPONENTS



Harmony XVU Modular Tower Lights

- The innovative Harmony XVU range of Ø 60 mm tower lights and sounders offers multiple lighting patterns, mounting flexibility, modern aesthetics, and unrivalled brightness.
- IP65 and IP54 protection ratings for sounders
- Ultra-bright LED with 360° visibility
- 6 colors with 4 light patterns: steady, flashing, blinking, and rotating



881-2797	LED Beacon Green, Steady Light Effect	XVUC23
881-2791	LED Beacon Red, Steady Light Effect	XVUC24
881-2832	Beacon Tower Terminal Unit	XVUC21B
881-2823	Buzzer	XVUC9S
881-2845	Terminal unit, 100 → 240 V ac	XVUC21M

Harmony Estop with Illuminated Ring

- The modular Harmony XB5 range of 22 mm plastic control and signaling units combines simplicity of installation, efficiency, flexibility, modern design and robustness to meet most industrial applications
- Complete illuminated e.stop ttr 24V 2 white/red fixed colors 1NO+2NC



195-8730	Round Head	XB5AS84W3B41
195-8731	Mushroom Head	XALK84W3BE
195-8732	Mushroom Head	XALK84W3BG
195-8734		XALK178W3B140G
195-8735	Legend Plate	ZBY8L330

Harmony Wireless and batteryless package

- Wireless and batteryless package, containing a push-button, set of caps and receiver.
- Reduction of wiring allows for a quick and easy installation
- Flexible due to its mobility, giving greater control to operators. Can be used to remotely control machines up to 25 m away.



739-8060	Plastic, Ø22	XB5RFA02
739-8064	Metal, Ø22	XB4RFA02
739-8067	Metal, Ø22	XB4RFB01

3-Phase Monitoring Relay with NFC

- A 3 phase monitoring relay with configuration via FREE Zelio NFC Android App
- Monitors phase asymmetry, phase failure, undervoltage, overvoltage, over & under frequency
- 2 C/O outputs with adjustable on/off delay & voltages thresholds



179-0019	120-480Vac	RMNF22TB30
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Harmony Complete pendant control stations

- Pendant control stations for auxiliary circuits
- Designed for mechanical handling, these highly robust pendant control stations comply with the safety requirements of IEC standards
- IP65
- Double insulated polypropylene casing
- Screw clamp connection



746-8989	2 push buttons, 1 emergency stop	XACA2053
746-8986	2 push buttons	XACA205
746-8983	4 push buttons	XACA481
220-5173	4 push buttons, 1 emergency stop	XACA4913

Preventa 24V ac/dc Safety Relay

- Single-channel with 3 N/O safety outputs
- Monitoring of a movable guard, with emergency stop monitoring 1 or 2 channel wiring usable
- Configurable type of start is readily available for the type of activation you wish for your circuit



447-4477	3 Safety Contacts, 1 Auxiliary Contact	XPSAC5121
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OsiSense XS Inductive Proximity Sensors

- LED indication
- Reverse polarity protection
- Overload and short circuit protection



182-972	M30 × 1.5, 10 mm Detection, IP68	XS1M30MA250
444-3271	M12 × 1, 4 mm Detection, IP69K	XS1M30MA250
608-5748	M30 × 1.5, 10 mm Detection, IP67	XS1M30MA250

Harmony® XB5 Complete Pilot Lights

- This range of pilot lights from the Harmony® XB5 range of plastic control and signaling units combines simplicity of installation and flexibility
- It provides a solution for industrial applications demanding a high resistance to chemical agents and also provides double electrical insulation



609-6265	Orange	XB5AVB5
330-8947	Red	XB4BVM4
875-2917	Green	XB5EVB3
330-8919	Green	XB4BVB3

9012G Series Single Stage Pressure Switches

- The 9012G single stage pressure switches are control circuit rated devices
- This series of switches can be used in pneumatic and hydraulic systems and on a variety of machine and process applications to protect the equipment
- These pressure switches can be used to either control or monitor the system pressure



124-2119		9012GAW4
752-2421		9012GAW2

OsiSense XMLA Pressure Switch

- Fixed differential
- External pressure setting window available
- 1 NO & 1 NC snap acting contacts
- Temperature range: -25 to +70 °C



361-3429	300bar	XMLA300D2S12
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Altivar Process Variable Speed Drives

- Offers your business optimisation, real-time intelligence and provides the efficiency that you deserve. The Altivar Process Drive gives you extensive flexibility in water, wastewater, mining, minerals, metals as well as oil, gas, food and beverages



125-3262	3-Phase In, 0.1 → 599Hz Out, 5.5 kW, 400 V ac, 20.7 A	ATV320U55N4B
125-3255	1-Phase In, 0.1 → 599Hz Out, 2.2 kW, 230 V ac, 24 A	ATV320U22M2C
220-8683	3-Phase In, 4 kW, 600 V, 5.8 A, 6.5 A	ATV320U40S6C

TeSys Deca & Giga Motor Management

PROTECTION TO HELP OPTIMIZE MACHINE PERFORMANCE



TeSys™ Deca & Giga series Motor Management

Advanced motor protection for a wide range of applications

The TeSys Deca Circuit Breakers solutions are well known in the market since their launch, and continuously improved over the years.

In 2021, Schneider Electric brings new features to the market and makes the solutions more reliable and robust. With an integrated short circuit and extended protection against thermal overload and phase loss.

TeSys Deca Circuit Breakers helps provide consistent performance, enhanced safety and uptime, cost savings, and great functionality.

In addition, TeSys Deca Circuit Breakers combines with the TeSys Deca & Giga Contactors to offer a complete motor control solution from everything from simple machines to complex motor control centers.

Recently, Schneider Electric has launched the TeSys Giga Contactors and Overload Relays to complete the range. The new modularity and embedded diagnosis features makes the maintenance easier, quicker and smarter.

Wherever you are and anywhere your projects come together, you can trust Schneider Electric and TeSys contactors, circuit breakers, relays, and switches for unmatched reliability, complete compatibility with international standards, and the robust support of the Schneider Electric global supply network.

Start smart, run smart and stay smart with TeSys motor controls.

THE SCHNEIDER ELECTRIC DIFFERENCE:



Reliability & Quality

High electrical and mechanical endurance. Compliance to quality standards



Robust & Secure

High level of protection due to high breaking capacity of up to 100kA/400V. Long term protection due to high durability. Padlock lockable without any additional accessory.



Applications

TeSys Deca & Giga Motor Management are used in a wide range of applications across industries including HVAC, Packaging, Conveying, Pumping, Lifts, Oil & Gas, Mining etc.

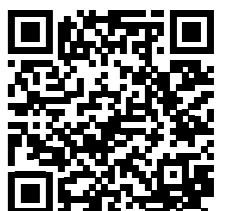


Start Smart. Run Smart. Stay Smart.

Browse RS Online for the complete and consistent range of TeSys™ Deca & Giga Motor Management solutions.



au.rs-online.com/schneider





E5CC Digital Temperature Controllers

- Large white LCD display
- 15.2 mm characters
- Dual PV/SV 4-digit display
- 50 ms high-speed sampling
- Short 60 mm housing case
- Easy connection to PLC with communications that require no programming
- Component communications can be used to link temperature controllers to each other
- Easy set up with CX-Thermo software (Windows XP, 7) without additional power supply via USB conversion cable



760-4589	Relay Output 100-240V	E5CC-RX2ASM-800
760-4592	Voltage Output 100-240V	E5CC-QX2ASM-800
760-4599	Current Output 00-240V	E5CC-CX2ASM-800

CONTACTRON '3 in 1' Hybrid Motor Starters

- The 3-phase hybrid motor starter with reversing function and current monitoring
- 75% less space required
- 75% less wiring time



719-1790	1 kW, 24 V dc, 2.4 A	2900574
719-1768	1 kW, 24 V dc, 2.4 A	2900567
719-1759	4 kW, 24 V dc, 9 A	2900421
719-1746	4 kW, 24 V dc, 2.4 A	2900414

Uninterruptible Power Supplies

- Basic UPS modules with either a self contained backup battery or supported by remotely connected lead AGM batteries
- Simple to use, no configuration and can quickly add supply resilience to a control system



168-2508	24Vdc 60W Self-contained UPS	2905907
665-7854	24Vdc 2A UPS unit	2866640
665-7851	12Vdc 4A UPS unit	2866598

RS510 Series Inverter Drives

- Compact V/ F & SLV (Sensorless Vector) Control drive
- Integrated Modbus RS485 & BACnet Communication
- Integrated Speed potentiometer



122-3410	3.7 kW, 10.1 A
122-3411	0.75 Kw
122-3413	1.5 Kw
122-3414	2,2 Kw

H3DK series multi-function timer relay

- Ecological design for reduced power consumption
- Wide power supply range reduces the number of timer models reduced
- The supply voltage ranges between 24VAC/DC to 240VAC/DC



733-4959	24 → 240 V ac/dc 0.1 s → 100 h	H3DK-M2 AC/DC24-240
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IP66 Wall Boxes

- Body material is AISI 304 stainless steel sheets
- IP66 rating
- Double lipped edges to ensure higher strength and ease of installation
- Easy to use, including removal of the door
- Door is fitted with a polyurethane gasket



758-6986	300 × 300 × 200mm
758-6974	300 × 400 × 150mm
758-6958	300 × 400 × 200mm
758-6999	400 × 300 × 200mm
758-6961	400 × 500 × 200mm
758-6992	500 × 500 × 200mm

Changeover Enclosure Thermostat

- Wide operating temperature range of +5°C to +55°C for use in a variety of environments
- Light weight of 105g to reduce bulk and strain on equipment



697-4446	0 to +60 °C	011410-00
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Vapo Bearing 12vdc Axial Fan

- Axial fan with brushless motor for electronic equipment
- Dimensions 60 × 60 × 10 mm



202-5419	12.2cfm, 560mW, IP20	MF60101V3-1000U-A99
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KX Terminal Boxes

- Can be used for many purposes like to house various electronic, electrical and mechanical components, equipment, and devices
- Allows flexible interior installation
- Maintain high protection category
- IP 66 protection
- NEMA 4 protection category



202-3837	300 × 200 × 120mm	3186930
202-3866	400 × 200 × 120mm	3187930
202-3835	300 × 150 × 120mm	3188940
202-3841	300 × 300 × 120mm	3189940
202-3820	300 × 150 × 80mm	3186930
202-3823	400 × 200 × 80mm	3187930
202-3862	200 × 150 × 120mm	3188940
202-3821	200 × 200 × 80mm	3189940

Energy Saving EC Axial Fans

- Energy saving electronically commutated AC motors
- IP54 rated
- Maintenance free ball bearings



701-3592	1000m³/h, 26W	W1G230-EB89-01
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Grey Steel Vent Grille

- For ventilation by convection
- Easy 4-screw assembly



517-0025	110 × 330mm	2543235
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FESTO



You want a clear run for your media.
You rely on modularity and easy installation.
We have the right pinch valve to meet your needs.

→ **WE ARE THE ENGINEERS
OF PRODUCTIVITY.**

VZQA: Pneumatically controlled 2/2-way pinch valve in NC and NO versions.

Versatile application areas, especially for filling and dosing applications. The elastomer closing element is perfect for all types of powder, fine granulate or any other abrasive media. The compact design allows installations in small spaces. Very easy to maintain or to exchange the sealing cartridge. Also for hygienic applications suitable for FDA approval.

Diameter: DN 6...25mm
Media pressure: 1...6 bar
Temperature: -5...150° C
Flow (k_v): 0.7...18m³/h

www.festo.com



VUVG Solenoid Valves

- The innovative design allows the control valve to be set to internal or external pilot air supply for manifolds with sub base valves
- The connection technology is easy to change via the electrical connection box
- Pressure range -0.9 bar to 10 bar for maximised energy density and more power



FESTO

202-1343

VUVG-L18-M52-RT-G14-1P3

121-5890

VUVG-LK14-M52-AT-G18-1R8L-S

175-2143

VUVG-L14-M52-AT-G18-1P3

Reed Pneumatic Position Detector

- Compatible with all Festo T-Slots
- 24 V dc Operating Voltage
- Non-contacting or contacting sensing



FESTO

121-5826

IP65, IP68, 24V dc, NO Operatio

SME-8M-DS-24V-K-5,0-OE

PEN Series Polyethylene Tubing

- FESTO PEN series polyethylene tubing offers high level of abrasion resistance and its suitable for a wide range of tasks. Flexible thanks to highly resistant materials and it is easy to install Superior quality pneumatic fitting
- Resistant to most cleaning agents and lubricants
- Tubing characteristics – Suitable for energy chains in applications with high cycle rates



FESTO

126-3104

8mm x 50m, Blue

PEN-8X1,25-BL

126-3103

6mm x 50m, Blue

PEN-6X1-BL

126-2777

6mm x 50m, Black

PEN-6X1-SW

FESTO SOLUTIONS **FESTO**

Compressed air filter-regulator

- Vertical assembly position
- Manual rotary condensation drain
- Standard nominal flow rate of 5,600 l/min
- Optional mounting type of either front panel or line installation
- G1/2 pneumatic connection



FESTO

121-5670

MS6-LFR-1/2-D6-CRM-AS

SV Series Monostable Pneumatic Manual Control Valve

- SV series panel mount manual control valve with M5 connection port
- Robust plastic body
- Maximum operating pressure of 8 bar
- Operating temperature of -10 °C to +60 °C



FESTO

121-5861

5/2, Monostable

SV-5-M5-B

au.rs-online.com





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From bearings to solenoid valves, from seals to hoses, and with all types of fittings - pneumatic and hydraulic - RS PRO has what you need to maintain your production to high-quality standards, at the price you expect.



Find out more at rspro.com



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Air Hoses

- Rely on strong, flexible and highly pressure-resistant RS PRO air hoses



Visit rspro.com or scan the QR Code to view over 200 products in our Air Hoses range



Structural Systems

- Build your own framework or a customised structural system with our extensive RS PRO offering



Visit rspro.com or scan the QR Code to view over 350 products in our Structural Systems range



EXPEDITING AIR LEAK DETECTION

FLUKE®

Today's problem: up to 40% of the world's industrial energy is lost due to leaks in compressed air systems. Globally billions of dollars vanish due to energy loss and downtime associated with low air pressure.

Even the most minor air leaks can compound product and energy waste and lost production time—especially for a production line that cannot function without compressed air to run its tools and processes.

If there isn't enough compressed-air pressure for the equipment to function at optimal levels, the results will be costly.

The more leaks in the system, the harder the compressor needs to work to deliver the needed air to the equipment, which is not optimal for the compressor.

This increase in demand raises the risk of an inadequate amount of compressed air for the tools and process equipment.

Compressed air leaks also increase energy costs. A single 6mm air leak can cost over \$6000 a year in energy costs



A partner in air-leak detection

How do you stay on top of controlling air leaks with so many other priorities on your mind? That's the question a leading heavy equipment manufacturer recently answered as they discovered a new partner in air-leak detection.

This manufacturer uses between 1800 and 2600 CFM of compressed air each day. That volume of compressed air runs up to 200 torque tools per line, as well as process equipment responsible for moving large sheets of half-inch steel and positioning parts. If a single line had a leak, it could impact production and increase energy waste. And that is just one leak...

When Fluke offered this company a chance to test its new Fluke ii900 Sonic Industrial Imager (Acoustic Imager), they immediately accepted. The ii900's array of tiny super sensitive microphones detect sounds both in the human hearing range and the ultrasonic range and, even more uniquely, allows the user to actually see sound.

"Being able to visualise where the problem is adds another dimension," says the company's maintenance manager. "You can identify which thread, fitting, or hose is affected. Being able to pinpoint where the leak is coming from on that image is extremely exciting."

The ii900 can visually scan large areas from up to 50 metres away, expediting leak detection at the plant and significantly reducing the number of hours previously spent on that task.

"Some days we can find and repair 30 or 40 leaks in just a couple hours," the manager stated.

"Plus, we can use the ii900 during production hours when it's extremely loud in here and still been able to capture leaks at the rafter level up to 7 or 8 metres away".

Scanning for leaks without affecting production is a huge advantage for the manufacturer. "We never thought of testing for air leaks during production because we couldn't shut down the aisles and move people out of the area to go and look at a potential leak," says the manager. "Now, we can stand on the sideline and scan the air lines overhead while carts and people are moving underneath. We're not affecting their work, which is better for everyone."

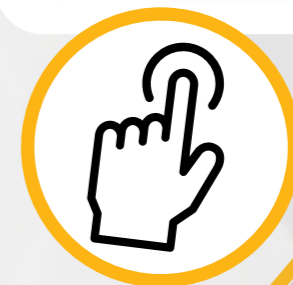
Shop our wide range of locally stocked Fluke Test & Measurement equipment at:

 au.rs-online.com/fluke

**Fluke ii900
Sonic Acoustic Imager**

LeakQ™ Mode for leak detection

RS STOCK NUMBER: 187-6163



Fluke ii900 Ultrasonic Leak Detector

- Do more with the same air compressors – delay the capital expense of purchasing an additional compressor
- Ensure proper air pressure to your pneumatic equipment
- Lower utility costs
- Reduce leak detection time
- Improve reliability in your production line



187-6163 Fluke ii900 Acoustic Imager, 7in Display

ii900

Fluke TiS75+ Thermal Imaging Camera

- 384 × 288 infrared resolution
- Asset Tagging
- Touchscreen IR Fusion™
- IS3 and AVI video recording
- Measure up to 550 °C
- Dew-point calculation



215-3173 384 × 288 (110,592 pixels) FLK-TIS75+ 9HZ

Fluke Ti480 PRO Thermal Imaging Camera

- 640 × 480 infrared resolution
- Increased sensitivity to visualise temperature differences
- More intuitive visual interface, improved, user-tested, touch screen interface
- Get 4× the pixel data with SuperResolution, which captures multiple images and combines them to create a 1280 × 960 image



171-6857 640 × 480 Resolution FLK-Ti480 PRO 9HZ

Fluke 805 Vibration Meter

- Sensor tip design minimises measurement variations
- Low & high frequency ranges
- USB connection enables data export to Excel
- Trending in Excel using built-in templates
- Offers four-level severity scale to assess problem urgency and bearing condition



811-1397 Acceleration, Displacement, Velocity FLUKE 805 FC

Fluke MDA-550 Series III Motor Drive Analyser

- Key Measurements: Inverter output voltage, DC bus voltage/ripple voltage, harmonics, unbalance
- Three-tools-in-one: Motor-drive analyser, waveform analyser, and recording data logger
- 600 V CAT IV/1000 V CAT III rated for use at the service entrance and downstream



230-5659 550MHz, 4 Channels FLUKE-MDA-550-III

Fluke 1770 Series Three-Phase Power Quality Analysers

- Automatically measure power and power quality parameters
- At-a-glance power quality health for faster troubleshooting
- Easily view V/A/Hz, power, dips, swells, and harmonics data
- Capture high-speed transients up to 8 kV



232-0535

FLUKE-1777

232-0533

FLUKE-1775

232-0531

FLUKE-1773

1736 and 1738 Three-Phase Energy Monitor and Loggers

- Records waveform snapshots and RMS profile
- Measure all three phases and neutral with included 4 flexible current probes
- Optimised user interface: quick, guided, graphical setup



900-9983

FLUKE 1736/B

900-9986

FLUKE-1738/EUS

Fluke 729 30G FC Pressure Calibrator

- Automatic pressure generation and regulation to 300 psi
- Easily document the process using onboard test templates
- Automatic internal fine-pressure adjustment



144-5553

FLK-729 30G FC

Fluke 190 Series III ScopeMeter® Test Tools

- Rated for industrial environments CAT III 1000 V/CAT IV 600 V
- Automatically capture, view and analyse complex waveforms
- Large, bright color display for easy in-the-field viewing



230-5658 500MHz, 4 Channels

FLUKE-190-504- III-S

Fluke 754 Multi Function Calibrator

- Calibrate temperature, pressure, voltage, current, resistance and frequency
- 3 operating modes: measure; source; simultaneous measure/source
- Easy-to-follow, menu-driven display which guides users through tasks



744-2527

Fluke-754



MIT410/2 Insulation Tester

- Designed for electrical and industrial testing
- Single range, faster continuity testing from 0.01Ω to 1MΩ (New)
- Adjustable insulation test voltage from 10V to 1000V and 200GΩ range
- 600V Trms AC and DC voltage measurement
- CAT IV 600V with PI and DAR



Megger.

921-4510 1000V, 200GΩ, CAT IV

1006-735

FLIR MR176 Moisture Meter

- High-quality and reliable
- Thermal image resolution of 4800 pixels
- Document readings and images to share via included USB cable
- Review images and generate reports with free FLIR tools software
- Easy targeting with a laser pointer and display cross-hairs
- Vapor pressure measurement 0.0kPa to 12.0kPa
- Temperature measurement 32°F to 122°F (0°C to 50°C)
- Power source battery type



922-6236 4800 pixels

MR176

Truevolt 34450A Bench Digital Multimeter

- Up to 190 readings/second
- 0.015% DCV accuracy
- 11 measurement functions
- Ultra-bright OLED with dual display capability
- Up to 50,000 memory points for data logging
- Built-in histogram function



773-9752 100kHz

34450A

InfiniiVision 1000 X-Series Oscilloscopes

- 50 to 100 MHz – See more signal detail with 50,000 wfms/sec update rate
- Test quickly and easily with a simple, intuitive user interface and built-in help and training signals
- Get professional-level functionality with industry-leading software analysis and 6-in-1 instrument integration
- Intuitive GUI and built-in help available in 15 different languages



200-5279 50MHz, 2 Channels

EDUX1052A

200-5274 70MHz, 2 Channels

DSOX1202A



MT-6600 Multifunction Tester

3 YEAR WARRANTY

- Test a variety of installation parameters
- 3.5 in TFT colour LCD display with 320 × 240 pixe
- Fast high current loop test
- Variable RCD current mode for customized settings
- PASS/FAIL indication for RCD tests
- Safe Earth Volt Touchpad detects raised earth voltages greater than 50 V, indicating potential dangerous situations



144-5338 1000V

Multifunction Calibrator

3 YEAR WARRANTY

- High precision calibration of RTDs and thermocouples
- Enables calibration of any process device that measures temperature – both sensors and temperature measuring instruments
- Can source and measure 14 types of RTD and 11 types of thermocouple



174-9557 4-20mA

Handheld Digital Multimeters

- Compact, rugged and high performing digital multimeters
- These handheld devices can measure capacitance, voltage, electrical current and resistance with diode and continuity check

123-3239 IDM71

123-3242 IDM72

123-3243 IDM73

123-3244 IDM91E

Industrial Multimeter With Bluetooth

3 YEAR WARRANTY

- Ideal for measuring a wide range of electrical parameters such as voltage, current, resistance, capacitance and frequency
- Clean and user friendly interface with a large white LED backlit display, allowing you to easily display measurements in a wide range of environments
- With Bluetooth connectivity, you can also save and share data quickly and efficiently to your smart device



199-3846 Bluetooth Connectivity

AC Current Datalogging Clamp Meter

3 YEAR WARRANTY

- Flexible true RMS clamp meter specifically designed for access to awkward and hard to reach areas
- Ideal for the types of jobs where the hard jaw clamp meters are unable to gain access to, as the flexible coil can be snaked around obstructions with ease
- Plus datalogger for monitoring, and Bluetooth interface for results export



201-0209 CAT III 1000V, CAT IV 600V



3 YEAR WARRANTY



Colophony-Free Tin/Lead Solder Wire

- Versatile soldering wire that can be used for a wide range of soldering tasks
- Alloy used consists of 60% tin and 40% lead
- Melting point between 183-188°C
- Low odour formulation with 1.1% flux content
- Soldering iron typical tip temperature for this solder wire is 320-360°C



3 YEAR WARRANTY

800-7661 0.7MM
756-8871 0.4MM

VDE Tool Kit

- Tool kit containing all the essential hand tools for electrical work
- All tools tested to IEC 60900
- Kits contains: combination pliers, long nose pliers, cutters, Ph2 screwdriver, 4 & 5.5mm slotted screwdrivers in a plastic case with transparent lid



3 YEAR WARRANTY

473-350 7 Piece

Retractable Automatic Knife Standard Blade

- Aluminium-bodied safety knife with automatic blade retraction
- When cutting, the blade remains outside the body, but when pressure is relaxed the spring loaded blade retracts into the handle
- Supplied with one blade



3 YEAR WARRANTY



615-9164 Automatic

ESD Grounding

- Our RS Pro range of hard-wearing ESD grounding straps have been designed to ensure efficient static bleeding, to ensure a reliable method of static dissipation
- Premium quality fabric band and cord set
- Fully adjustable wrist strap fits all sizes



3 YEAR WARRANTY

287-7379 Banana Plug - Croc Clip
287-7414 Banana Plug - Press Stud

Insulated Crimping Tool

- Offers precision, consistent and reliable crimp
- DuoTech soft grip handle allows for optimum user comfort and ergonomics, while it works as a non-slip handle with little friction to avoid any injury or accidental slipping
- Self-releasing mechanism allows tool to be locked in place for a secure crimp
- Suitable from crimping insulated terminals 0.5 to 6mm



3 YEAR WARRANTY

192-3665 0.5 - 0.6mm²



FX600 Soldering Iron

- Lightweight, ergonomic handpiece
- Compact size
- Suitable for SMD and Through hole applications



768-8985 50W

FX600-14

Knipex Electrical Safety Mat

- For added protection when working live or close to live parts



665-4640 1m x 1m x 1mm

98 67 10

BE-9881S Insulated Ergo™ 1000V Live Working 5 piece Screwdriver set

- Conforms to IEC 60900, DIN EN 60900, VDE 0680 part 2
- All products are manufacture date marked
- Vanadium steel blades, hardened and chrome plated
- Tips are black oxide finished for high accuracy
- 3-part rounded ergonomic handle (with hanging hole) prevents pressure points and ensures optimum torque



288-8004 5 Piece

BE-9881S

Carbon Steel Insulated Plier Set

- Digitally controlled heat gun with safety heat indicator and four memory programmes
- One-hand operation with soft grip handle and 3m power cord
- Maximum temperature 650°C and airflow of 500L/min
- Ideal for shrinking heat shrink tubing, film or packaging; stripping paint; drying out wood; softening adhesives or thawing frozen pipes



204-3825 2 Piece

PG-2

Bondhus Ball End L-Wrench Hex Key Set

- Ball End Tips 25° working angle for quick funnelling into screw
- Up to 20% stronger, with more torque and higher wear resistance than standard steel
- Environmentally safe finish for better corrosion resistance and grip
- Metric Range: 1.5, 2, 2.5, 3, 4, 5, 6, 8, 10mm
- Imperial Range: 0.050, 1/16, 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 3/16, 7/32, 1/4, 5/16, 3/8"



2552612944 9PCE Metric

BD10999

204-3815 13PCE Imperial

BD10937



3M™ Aluminium Foil Tape 425

- Thermally conductive tape helps dissipate heat and improves heating and cooling efficiency to protect temperature sensitive materials
- Resistant to chemicals to protect surfaces during de-paint process and other chemical masking operations



175-7785	12mm	425 - 12,7MM (21203)
175-7791	19mm	425 - 19,1MM (21205)
175-7808	25mm	425 - 25,4MM (R06933)
144-4029	38mm	425 38MMX55M
175-7814	50mm	425 - 50,8MM (R06933)
144-4030	75mm	425 75MMX55M

High Energy Alkaline AAA Batteries

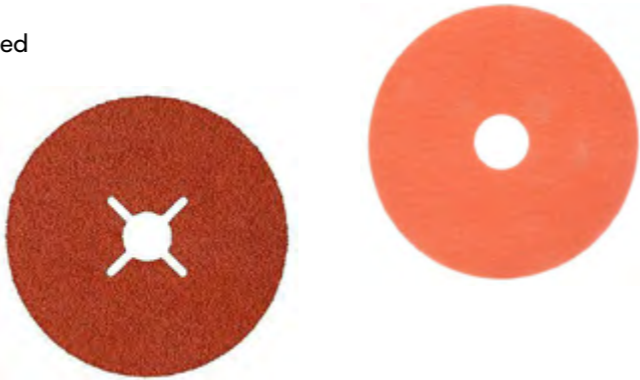
- High energy density
- Less health and environmental effects
- Long-term shelf life and reliability.



176-9039	1.5V, 20 Pack	4903121492
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3M™ Cubitron™ II Silicon Carbide Discs

- The Cubitron II range of Fibre Discs are made with precision shaped ceramic grain technology
- Designed with ultra-sharp, fast-cutting points that wear evenly
- The disk runs cool and optimises mineral breakdown to maximise disc life. Delivering better productivity, disc life and grinding speed



910-7949	178mm, P320 Grit	3M 987C diam 178, 36+
910-7945	115mm, Very Fine Grade, P240 Grit	3M 987C diam 115, 60+

Wypall® X80 Jumbo Roll Wipers

- Extra strong, absorbent and bulky - ideal for heavy duty wiping tasks
- They are compact and can be re-used for cost-effective wiping. WYPALL® X80 Wipers can halve your waste disposal costs and help to reduce freight and storage costs



226-4110	Roll of 540	94173A
226-4179	Mobile Jumbo Roll Dispenser	4951

Nylon Non-Releasable Cable Ties

- High quality
- Suitable for a multitude of uses
- Easy to thread



233-499	100 X 2.5, PACK 1000
233-493	380 X 7.6MM, PACK 100
233-487	300 X 4.8MM, PACK 100
233-471	203 X 4.6MM, PACK 100



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Put your confidence in our sustainable solutions

We set ambitious **sustainability** goals in key priority areas which enable us to have a lasting positive impact around the world. Our priorities and goals are informed by who we serve, what we do, and how we do it. We work together to foster innovative ideas and pursue longer-term change while striving to create social, environmental, and financial value.



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RIGHT PRODUCTS. RIGHT TIME.

WE'LL HELP YOU GET THE JOB DONE

We offer a broad and extensive product range to support our industrial and electronics customers with 500,000+ stocked products, from over 2,500 suppliers – including our own brand, RS PRO.

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CABLES & WIRES
ENCLOSURES, STORAGE & MATERIAL HANDLING
FUSES, SOCKETS & CIRCUIT BREAKERS
HVAC, FANS & THERMAL MANAGEMENT
LIGHTING
RELAYS
ROBOTS & ROBOT PARTS
SWITCHES

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CONNECTORS
DISPLAYS & OPTOELECTRONICS
PASSIVE COMPONENTS
PCB PROTOTYPING
POWER SUPPLIES & TRANSFORMERS
RASPBERRY PI, ARDUINO & DEVELOPMENT TOOLS
SEMICONDUCTORS

Mechanical Products & Tools

ABRASIVES & ENGINEERING MATERIALS
ADHESIVES, SEALANTS & TAPES
FACILITIES CLEANING & MAINTENANCE
FASTENERS & FIXINGS
HAND TOOLS
PLUMBING & PIPELINE
PNEUMATICS, HYDRAULICS & POWER TRANSMISSION
POWER TOOLS, SOLDERING & WELDING

IT, Test & Safety Equipment

COMPUTING & PERIPHERALS
OFFICE SUPPLIES
PPE & WORKWEAR
SECURITY & IRONMONGERY
SITE SAFETY
TEST & MEASUREMENT

