MRO Solutions

Issue #4

Energy Efficiency

Upgrade & maintain to achieve your full efficiency potential. From the office, factory floor, warehouse to labs, there are many ways to benefit the environment and your bottom line.

au.rs-online.com

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

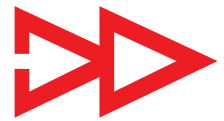Take advantage of our customer support, technical advice & dedicated account managers.

Competitive Quotes

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

Flexible Delivery

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

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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.

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Mon - Fri (8am - 6pm AEST)
T: 1300 656 636 | F: 1300 656 696
Email quotes: quotesandtenders@rs-components.com

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Welcome

Keeping Australia's manufacturing sector globally competitive relies on optimising efficiency and minimising production costs. Production advantages and cost savings will be key to Australia's manufacturing sectors survival and success.

It makes sense for businesses of all sizes to understand their energy use and costs, and know the options available to reduce them.
Better energy efficiency lowers electricity bills, makes businesses more competitive and helps manage energy demand.

RS has been serving the needs of buildings, facilities and energy management professionals for decades. Our understanding of industry requirements plus our comprehensive range of energy efficient products in lighting, heating & plumbing, control & metering, test & measurement, insulation, IT and renewable energy offers a unique ability for our customers to ensure compliance and return cost savings through energy efficiency projects through a single source.

In this edition of MRO Solutions we highlight products and opportunities to reduce energy consumption, optimising efficiency and minimising production costs.

Thank you for trusting RS Components with your business and we will continue to find ways to innovate and meet the evolving needs of the markets you operate in.

Regards,

Scott Philbrook
Managing Director
RS Components ANZ

HITTING THE ONE MILLION MARK

THE DESIGN AND ENGINEERING PLATFORM DESIGNSPARK, LAUNCHED BY RS COMPONENTENTS, CELEBRATED ITS TEN YEAR ANIVERSARY WITH A RELAUNCH IN SUMMER 2020.

The innovation platform DesignSpark already counts over 970,000 members. In the community technicians and engineers can find information, help and knowledge to expertly and quickly realise new projects. RS components celebrates the tenth anniversary of the website with a new design and additional features. The changes are based on user feedback and aim to make the site even more user friendly: the interface is even more clearly laid out so content can be found and applied easier now. Improved search and filter tools and colour coded sections support navigation and enhance user experience.

Since its launch in July 2010, DesignSpark grew into a popular resource that is used by engineers around the globe.

4 REASONS TO USE DESIGNSPARK

» Support from the community
» Discovery of new technologies
» Library
» Free software

Maybe one of the members can answer your question? Just give it a try!

DESIGNSPARK.COM

DESIGNSPARK

"WHEN WE LAUNCHED DESIGNSPARK IN 2010, WE WANTED TO SUPPORT DEVELOPERS ON ALL LEVELS. THIS STILL HOLDS TRUE."

MIKE BRAY, GROUP VP OF INNOVATION AND DESIGNSPARK

The platform offers solutions, help and software that supports developers throughout the complete development process: from the idea to the production. Especially rapid prototyping enables the development of ideas to market maturity. The freely accessible collection of professional DesignSpark softwares for design, mechanical construction and electronics have been used a million times to realise design projects by experts and students worldwide.

DesignSpark also is a reliable partner in the education sector. We work with universities and schools. Projects and competition on the site aim to inspire a younger generation to get involved in MINT fields. This year there are a series of competitions on the website and social media that animate all technically interested people to get involved. ✦

EVERY
4 SECONDS
CONTENT ON THE WEBSITE IS READ

EVERY
12 SECONDS
AN ENGINEER DOWNLOADS A DESIGN ASSET

EVERY
20 SECONDS
A DESIGNSPARK SOFTWARE TOOL IS OPENED

EVERY
3 MINUTES
A NEW MEMBER JOINS THE COMMUNITY

RS PRO BOT
THE NEW STAR ON YOUTUBE

A RS PRO original – may we introduce our new brand ambassador: the RS PRO BOT. The RS PRO BOT was launched in May 2020 with a big media campaign and is the new face of our name brand RS PRO. Many customers have taken to the endearing little robot just as quickly as we did. His reliable, professional but also cheerful demeanour make him the perfect brand ambassador.

On our YouTube channel you can find several animated videos showing the RS PRO BOT in action. In elaborately animated videos we accompany our new main character to certification of RS PRO products. Every RS PRO product that gets the RS PRO quality seal needs to undergo an extensive quality control. Such as the screwdriver that the little robot has subjected to many tests in one of the videos. The RS quality seal stands for tested quality and adheres to strict rules. Our testing process detects and eliminates potential product flaws or manufacturing defects. This is how we ensure that RS PRO products comply with current industry standards, and the inspection of the screwdriver by our RS PRO BOT is just as rigorous. Whether heat, cold, or pressure, the screwdriver is tested under all conditions. Only after passing every test, the little robot awards it the seal of approval for excellent quality.

For Massimiliano Rottoli, who developed the character of the little robot with his team, the RS PRO BOT perfectly embodies the values of our own brand RS PRO: "The quality of each application depends on the quality of each individual part. Details matter. This attention to detail, reliability and quality – that's what RS PRO and our RS PRO BOT stand for."

Electrocomponents partners with Engineers Without Borders International

Electrocomponents has signed a one-year partnership agreement with Engineers Without Borders International, the leading movement that puts global responsibility at the heart of engineering in every part of the world.

For the duration of the partnership, Electrocomponents will provide financial and hands-on support to Engineers Without Borders South Africa and Engineers Without Borders UK for the annual Engineering for People Design Challenge, as well as for the Inspiring and Building Community Leaders programmes. The competition, now in its tenth year, is a collaboration in 2020/21 between three of the 60 Engineers Without Borders organisations: UK, South Africa and USA.

The objective underpinning this unique challenge is to encourage university students to broaden their awareness of the social, environmental and economic implications of their engineering solutions. The initiative embeds a globally responsible awareness during a pivotal moment in the students' career and provides an opportunity for them to develop solutions that could make a positive difference to communities and individuals around the world.

More than 7,000 first- and second-year university engineering students spanning three continents are competing this year to find practicable ways to improve the livelihoods of people in the neighbouring communities of Lobitos and Piedritas on the northern coast of Peru. Though popular as a surfing destination, the two towns still experience significant challenges with sustainable waste management, energy, food and water supply, digital communications and transport infrastructure. The COVID-19 pandemic has compounded the difficulties in accessing the economic benefit that the growing tourism industry offers through employment, investment and direct tourist spending.

As well as providing essential funding to the Engineering for People Design Challenge, Electrocomponents is very much involved at a practical level, offering critical skills training to students to boost confidence in areas such as presentation skills, for example. The first of these sessions will take place during the Student Designathon on 17 February.

Electrocomponents will also sit on the judging panel at the Engineering for People Design Challenge Grand Finals, where the best team from the participating universities, previously selected by academics from each institution, will showcase their solutions in a bid to win the Grand Prize of an educational bursary. The runner up and People's Prize winners will receive a shared bursary.

Electrocomponents' collaboration with Engineers Without Borders organisations is part of a wider commitment by the Group to ensure that the company delivers and promotes the highest levels of environmental, social and governance (ESG) standards affecting people and the planet. It is also another example of Electrocomponents' enduring educational support for the new generation of engineers who will shape our future world. Through this partnership, Electrocomponents has pledged to extend its support to other Engineers Without Borders organisations, with activity planned for later this year in the USA and Australia.

For more information about Electrocomponents' involvement with Engineers Without Borders visit:
ewb-uk.org/movement/partnerships/corporate-partners

56 Series

Designed to mix & match. Packed with features designed to outperform all other protected accessories.

Life Is On

CLIPSAL
by Schneider Electric

8mm Padlock ON/OFF facility

Rotary ON/OFF switch

Captive stainless steel combniation head fixings for corrosion resistance and effortless installation

Permanent laser engraved ratings and specifications are durable & clearly displayed.

Redesigned transparent socket cover for improved visibility, strength & accessibility.

Larger and easy-to-use latch design. Socket cover automatically closes to ensure IP rating is maintained. Padlocking option available.

Combination Switched Socket Outlets

• Combination sockets feature a clear dustproof and hoseproof flap with a snap catch latch
• Both the superseded non IP56 plain plugs and the current IP66 retention ring plugs can be accommodated
• 250V, 110V and extra low voltage two module combinations are also available

2141534	1 Pole 15A 32V	56C215/32-GY
2150355	1 Pole 10A 110V	56C3/110
2141799	1 Pole 10A 250V	56C310HD

Appliance Inlets

• 56 Series Appliance Inlets feature a downward facing, angled pinhousing which enables extension socket plugs to be neatly connected without bulky right angle entry
• A screwed lock ring is standard

2138433	10A 250V 3 Flat	EY56AI310
2138281	20A 250V 3 Round	56AI320-GY
2150352	10A 500V 4 Flat	56AI410

Surface Socket Outlets

• Clipsal Surface Socket Outlets range in size from 32V 10A to 500V 50A
• All sockets feature hoseproof and dust resistant flaps with automatic snap catch latches
• The transparent flap enables instant visual inspection of socket condition and pin configuration

2138370	10A Grey 2 Pole	56SO210LE-GY
2150447	10A Grey 3 Pole	56SO310RPLE-GY
2150514	10A Grey 4 Pole	EY56SO410

Surface Switches

• 56 Series Surface Switches are available from 250V, 10A to 500V 63A
• They incorporate a positive, rotary switch action. 'ON' and 'OFF' positions are clearly marked and there is provision for two padlocks
• Hole diameter is 8mm

2141916	1 Pole 10A 250V	56SW110-WW
2150478	1 Pole 20A 250V	56SW120LE-RO
2138409	2 Pole 20A 500V	56SW220LE-GY

Heavy Duty Surface Switches

- Clipsal Heavy-Duty Surface Switches come with integral 3 or 4 pole configurations, from 25 to 80A ratings
- The switch actuator comes standard in safety red/yellow and has
- 3 padlocking facilities
- Hole diameter is 8mm

2138426	3 POLE 25A 500V	56SWH325-GY
2138427	4 POLE 25A 500V	56SWH425-GY
2150500	4 POLE 63A 500V	56SWH463-GY

Key Operated Switches

- 56 Series Key Operated Switches are designed for all key switch applications with the choice of three versions
- Earth and neutral connectors accommodating
- 3 × 6mm^2 are supplied with all models

2141848	1 Pole 15A 250V, Off	56K1SW115LE-GY
2141852	1 Pole 15A 250V, On/Off	56K2SW115-GY
2141588	1 Pole 15A 250V, Off Medium Security	56K2SW115MS-GY

Changeover & Reversing Switches

- Designed to give full motor control in a unit that is rated IP66
- Clipsal's Changeover and Reversing Switches are housed within single modules as part of the overall modular concept of the range

2150481	1 Gang, 2 Pole	56SW220CO
2141937	1 Gang, 4 Pole	56SW420CO-GY
2141930	1 Gang, 3 Pole	56SW320R-GY

Angle And Straight Plugs

- Clipsal has a comprehensive range of straight and angle plugs
- All are fitted with a screwed ring for securing to socket outlets and to ensure IP66 rating
- Design innovations include a transparent centre body section for instant visual checking of connections and an internal cable clamp which grips two ways to prevent cable twisting

2150418	15A, 32V, 2 Pin	56P215/32-EO
8674595	20A, 250V, 4 Pin	56P320-EO
2141606	10A, 500V, 7 Pin	56P710-EO

Push Button Control Stations

- This rugged range consists of five different combinations of stop start control stations
- The stations are ideal in wet, dusty or dirty conditions for controlling motor starters on pumps, saws, compressors, lathes, processors and processing lines

2141612	Start	56PB-GY
2138362	Emergency Stop	56PBS1LE-GY
2138279	Stop / Start	56/2PBS1-GY

Extension Sockets & Appliance Connectors

- All connectors have impact resistant, UV stabilised mouldings
- The IP66 rating can be achieved when extension socket/connectors are used in conjunction with compatible accessories such as 56P Plugs, 56PA Plugs and 56AI Appliance Inlets

2141825	3 Flat PIN, 250V, 10A	56CSC310-RO
8674589	4 Round PIN, 500V, 32A	56CSC432-EO
8674573	5 Round PIN, 500V, 32A	56CSC532-EO

RS

Measure your usage

Unless you know your current usage patterns, it's not possible to prioritise and focus on the areas that will have the greatest impact. Using portable or hand-held test equipment allows you to determine your overall demand profile, as well as the demand in each area of the business. It also allows you to spot equipment using more energy than it should, and helps identify why.

U1242B Handheld Digital Multimeter

- 10,000 - count dual display
- Overmold body casing
- Up to 0.09% basic DCV accuracy

KEYSIGHT TECHNOLOGIES

6997351	10A ac 1000V ac 10A dc 1000V dc	U1242B

FLIR Ex Series Infrared Cameras with MSX®

- Infrared camera with extended temperature range
- Easy to use with simple button navigation
- Record radiometric JPEGs that are easy to share with clients
- Upload thermal photo instantly over Wi-Fi via the FLIR tools mobile app
- Accuracy : ±2°C or ±2% of reading FOV: 45° x 34°
- Object temperature range: –20°C to 550°C in two ranges

FLIR

1846123	E6-XT : 240 × 180 pixels	63907-0804
1353295	E85 - 640 × 480pixel	78502-0201
1846121	E5-XT: 160 × 120 pixels	63909-1004

FLIR MR176 IGM™ Moisture with Replaceable Hygrometer

- IGM™ moisture meter with replaceable hygrometer
- Integrated pinless moisture measurements for fast detections, and external pin probe included with expandable probe options
- Maxing ratio: range 0 to 560GPP (0.0 to 80.0 g/kg) / basic accuracy ±2GPP (0.25 g/kg)
- Relative humidity: range 0 to 100% /basic accuracy 2.5%RH
- Vapor pressure: range 0.0 to 12.0kPa /basic accuracy ±0.05kPa

FLIR

9226236	0°C to 50°C	MR176

DPI 705E and DPI 705E-IS Handheld Pressure Indicators

- 48 pressure ranges from ±25 mbar to 1,400 bar (±1.69 psi to 20,000 psi)
- Total 1 year uncertainty 0.05% full scale over -10°C to +50°C temp range
- Remote plug + play pressure and
- Resistance Temperature Detector sensors
- DPI705E Safe Area pressure indicator
- DPI705EIS Hazardous Area pressure indicator

Druck

2012871	200 bar, Hazardous Area	DPI705EIS-1-02G-P1-H1-U0-OP0
2012877	70 bar, Hazardous Area	DPI705EIS-1-16G-P1-H1-U0-OP0
2012885	2 bar, Hazardous Area	DPI705EIS-2-07G-P1-H1-U0-OP0
2012870	70 bar, Safe Area	DPI705E-1-16G-P1-H0-U0-OP0

PM700E Remote Pressure Sensors

- External sensor has precedence over the internal sensor
- Operating temperature range of -10°C to +50°C
- Integral calibration record with calibration due count-down display

Druck

2012889	70bar	PM700E-1-16G-P1-H0-OP0
2012890	350bar	PM700E-1-20A-P6-H0-OP0
2012891	1000bar	PM700E-1-23A-P6-H0-OP0
2012892	70bar Haz	PM700EIS-1-16G-P1-H1-OP0
2012893	350bar Haz	PM700EIS-1-20A-P6-H1-OP0
2012894	1000bar Haz	PM700EIS-1-23A-P6-H1-OP0

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Megger MIT500 Series Insulation Tester

- Measures up to 10 TΩ
- Selectable test voltage from 250 to 5000 V
  PI, DAR, DD test
- Li ion battery - extended *capacity, rapid charge
- CATIV 600 V safety rating

Megger

| 7659586 | 5000V, 10TΩ, CAT IV | 1001-938 |

Megger DLR010X Rechargeable NiMH Ohmmeter

- Accurate results in under three seconds
- Auto current reversal cancels standing emfs
- 250 mW power limit (with *Autoranging with
- Manual option, Printer output and memory)

Megger

| 9106807 | 0.1µohm and 2000ohm | 1006-600 |

Megger TDR2050 Time Domain Reflectometers,

- AutoFind and FindEnd functions helps find the fault fast
- Trace tagging facility that allows a name to be saved with the trace
- Distance dependent gain to counteract signal attenuation
- Step function to improve detection of near end faults

Megger

| 8919769 | 20000m | 1005-021 |

Megger DET4TC2 Earth Tester

- 2, 3 and 4 point testing
- ART (Attached Rod Technique) capability
- Multiple, user selectable test frequencies
- Resistance measurement range to 200 K

Megger

| 489664 | 200kΩ CAT IV 100 V | 1000-345 |

Megger MFT1835 Multifunction Tester,

- Type B RCD testing for solar installations and
  3-phase RCD testing for industrial applications
- Choice of 3-pole, 3-pole with attached rod technique, 2-pole and
  stakeless tests for earth electrode resistance measurement
- Reverse polarity monitoring and correction on live tests
- Phase rotation indication for verification of rotating machinery

Megger

| 9011333 | 1000V , Earth Resistance Measurement | MFT1835-AU |

Megger DET24C Earth Tester

- Elliptical clamp shape improves access to
  earth cables and straps up to 50 mm
- Low maintenance flat jaw interface
- Measures ground resistance from 0.05 Ω to 1500 Ω
- Measures true RMS ground leakage current
  from 0.5 mA rms to 35 A rms

Megger

| 9106810 | 1.5kΩ CAT IV 600 V | 1007-331 |

The Fluke ii900 Sonic Industrial Imager can help you save time, improve efficiency and annual energy savings.

In todays industrial plants and facilities, many of the machines, tools, robotics, product handling and many more pieces of equipment all operate with compressed air, gas and vacuum systems, which provide a vital source of converted energy that is much more easier and convenient than other sources of energy such as electricity, however these resources are compromised by wear and poor maintenance practises.

The greatest of wasted energy in a compressed air, gas or vacuum system is leaks, which can often be hidden behind machinery or hard to inspect areas and are generally at connection points, overhead in fixed pipes or in cracked / worn hoses, these leaks can eventually cause downtime in the equipment or production facility that all adds to the cost.

The hidden cost of wasted air:

A U.S. Department of Energy study has shown that a single 3mm leak in a compressed air line can cost upward of $2,500 a year and that an unmaintained facility can waste 20% of its total compressed air production capacity through leaks, these findings were also backed up by New Zealand's government figures that showed that system leaks can account for 30% to 50% of a compressed air system's capacity.

So, to compensate for these inefficiencies, companies tend to buy bigger compressors than is necessary, which in turn causes addition energy costs, but the biggest potential costs is if the leaks cause a system failure, leading to production delays or unplanned downtime.

Getting to the heart of the problem:

Finding and fixing leaks isn't an easy process and many production facilities don't have a leak detection program and neither do they have the expertise or resource to quantify the amount of waste and determine the cost involves as it often needs specialists or consultants with energy analysers, so often a failure is the first sign there is a major problem.

Beyond performance issues and reduced energy efficiency, the damage caused by unnoticed gas or compressed air leaks can be substantial.

> ## The NEW Fluke ii900 Acoustic Imager will help you find these sneaky leaks so you can repair them before they cause costly downtime.

How leaks are generally found:

Normally the age-old method of listening for hissing sounds (which are very hard to hear in industrial environments) or spraying soapy water over the suspected area (which can cause a slip hazard) and looking for bubbles is the basic way of leak detection.

Apart from this method, the other tools for finding compressed leaks is an ultrasonic acoustic detector, which is portable tool that recognises high frequency sounds that are associated with air leaks, but these are time consuming and complex to use and require the operator to be close to the leak, so very difficult for hard to reach locations such as ceilings and this is often only used during system downtime.

Examples of where leaks can be found:

- Couplings
- Hoses
- Tubes
- Fittings
- Threaded pipe joints
- Quick disconnects
- FRLs (filter, regulator, lubricator combinations)
- Condensate traps
- Valves
- Flanges
- Packings
- Air lines

How much air is being wasted?

In any compressed air, gas and vacuum systems you can expect some leakage, but anything above 10% is considered wasteful, so using the Fluke ii900 sonic imager to identify where the leaks are coming from (and at distance), is a great time saving solution and can ensure facility downtime is minimised.

The Fluke ii900 Sonic Industrial Imager is available for next day delivery from RS Components.

Fluke ii90 - RS Stock Number 187-6163

Fluke a game-changing technology

Fluke have launched the ii900 sonic industrial imager that can pinpoint the precise location of leaks from up to 50m away, whilst being in noisy environments and without shutting down any equipment.

The Sonic imager is a hand-held device that can detect a broader range of frequencies than traditional ultrasonic devices, using their SoundSight™ technology to produce visual scans of air leaks, like that of infrared cameras detecting hotspots.

The real benefit over the ii900 over traditional more complicated test equipment can clearly be demonstrated in the following video, which compares the two technologies and shows the ii900 can be learned in around ten minutes.:

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

FLUKE

1876163	7in Display		ii900

Fluke 430-II Series Power Quality Analysers

- Analyze power quality issues, calculate the costs of wasted energy and prevent downtime with the Fluke 434-II Energy Analyzer and
- Fluke 435-II Power Quality and Energy Analyzer
- Advanced power quality health—At-a-glance power quality health data in real time so you can make better maintenance decisions
- Energy loss calculator—Discover the costs of energy loss specifically caused by poor power quality

FLUKE

7525004		FLUKE-434-II
7525008		FLUKE 435-II
7541268		FLUKE 437-II

Fluke Ti480 PRO Thermal Imaging Camera

- Increased sensitivity to visualize temperature differences
- Easier to visualize and diagnose issues with sharper onscreen images, multiple rectangle markers and 9 color palettes
- 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

FLUKE

1716857	9HZ	FLK-Ti480 PRO 9HZ

1736 and 1738 Three-Phase Energy Monitor and Loggers

- Records waveform snapshots and RMS profile
- Includes Fluke MP1 magnetic probe and Fluke 173× hanging kit
- Colour LCD display: 4.3in active matrix TFT, 480px x 272px, resistive touch panel

FLUKE

9009983	FLUKE 1736/B
9009986	FLUKE-1738/EUS

Fluke 805 Vibration Meter

- Sensor tip design minimises measurement variations
- Low & high frequency ranges
- USB connection enables data export to Excel

FLUKE

8111397	10 Hz to 1,000 Hz	FLUKE 805 FC

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

FLUKE

1445553	2.06 bar, 30 psi, 206.84 kPa Differential	FLK-729 30G FC

RS PRO RS-3322 Psychrometer

- It measures dew point, wet bulb and dry bulb temperature with user-selectable temperature units of °C and °F
- This humidity instrument can calculate the target superheat and the target evaporator exit temperature
- It is an ideal device for diagnosing problems with air flow across the evaporator

1938695   100 (Relative Humidity)%

RS PRO RS-325A Digital Thermohygrometer

- This high-quality thermal hygrometer is ideal for continuous monitoring and measurement of relative humidity (RH) and temperature for indoor climates
- This lightweight and easy to use unit from RS PRO is a great instrument for monitoring the general indoor air quality and can also be used to keep an eye on problem areas for further investigation

1959129   Max Humidity 99%RH

RS PRO HVAC Digital Multimeter

- With the addition of capacitance measurements, selectable frequency measurements and temperature measurement, this digital multimeter (DMM) is ideal for HVAC applications, offering exceptional value with high quality and reliable results

1993847   -40.0°C - 400.0°C

RS PRO 156B Bluetooth Power Clamp Meter

- 10,000 count digital display 50 segment Analogue bar graph
- Active backlit with large white LED display
- Power and power factor measurement

1624456   600A (AC/DC)

RS PRO 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

1233239	IDM71
1233242	IDM72
1233243	IDM73
1233244	IDM91E

RS PRO Compact Handheld Digital Multimeters

- Compact and handheld
- Digital 2000 count LCD backlit screen
- 3 year warranty

1231939	Manual Ranging, DT-912
1231938	Auto-ranging, DT-914

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PUT OUR RANGE TO THE TEST

Test and Measurement from RS PRO, the range that you can trust.

rspro.com/ test-measurement

Becoming energy efficient;

How can you do just as much, using less energy?

With buildings accounting for around 40% of total energy consumption worldwide, businesses have unmissable opportunities to start switching to more efficient systems.

While this can seem like a costly and daunting task, don't be put off, as even small upgrades can have a huge impact. In fact, companies could reduce energy costs by up to 20% just by making simple changes.

"Companies could reduce energy costs by up to 20% just by making simple changes"

From the office through to the factory, every part of your building and everyone running it can contribute to turning efficiency levels up and energy bills down.

And there are lots of benefits to doing so – not only are there valuable cost savings for your business, but also a significant environmental impact and increased productivity of employees.

DECREASE ENERGY CONSUMPTION USING DATA

To start seeing savings, it's helpful to understand how much energy is being used where and at what time. Energy loggers monitor power use across your applications, so you can identify what changes can improve efficiency. This will allow you to see whether poor insulation is causing unnecessary heat loss or whether machines are being left on when they're not needed.

It's easy to add retrospective energy metering to distribution or control panels; you don't have to wait for new equipment to start monitoring usage.

SHINE A LIGHT ON YOUR ENERGY USAGE

Lighting is another way for businesses to make positive changes. LED lamps often have a life expectancy of up to 50,000 hours, so even if they're used for 10 hours a day, every day of the year, they still offer a lifespan of more than 13 years.

This means that retrofit LED lamps can reduce your energy consumption by up to 90%, plus as minimal maintenance is needed, they also save time.

Intelligent lighting control, such as sensors and timed lighting, can have a huge impact on energy consumption. By dimming or switching off lights when there's nobody in a room, occupancy sensors can reduce electricity use by 30%.

"By dimming or switching off lights when there's nobody in a room, occupancy sensors can reduce electricity use by 30%."

Lighting can also increase employee performance. Research has shown that inadequate workplace lighting can impact people's mood, emotions and even result in health problems.

It's been found that exposure to bright light can induce alertness and provide a more pleasant environment to work in. Blue lighting has also been shown to stimulate production of hormones responsible for alertness and activity.

ENERGY EFFICIENCY IS HEATING UP

Upgrading your lighting isn't the only way to boost energy efficiency. Improved insulation materials and smarter HVAC controls help you waste significantly less money on heating bills. Inverters are electronic devices which help run AC motors in a smarter way by controlling the speed of pumps and fans, or you can invest in low energy fans as well.

There are also simple solutions such as door closers, which prevent heated or cooled air leaving a building by accident. And with environmental issues and global warming being hot topics in the current climate, it's important for businesses to consider their corporate social responsibility with efforts to look after the environment.

SAVE WITH SMARTER MANUFACTURING

Energy efficiency doesn't just apply to the office space, as there are smarter solutions for production environments too, which can deliver significant savings.

Intelligent power-down devices can detect computers going into standby and switch off electricity, while sensors can slow or stop conveyors when there's nothing in production. It's also effective to replace older motors which have been in use for more than 15 years with newer, more efficient ones. But even though energy efficiency is becoming smarter, technology isn't the only answer.

Educating and informing staff to help save energy is extremely beneficial. Introduce more signage to remind people to turn off equipment, and ask them to do simple checks like closing windows and doors when heating or air conditioning is on.

HELP YOUR BUSINESS START BENEFITING

With a 20% cut in energy costs representing the same bottom line benefit as a 5% increase in sales for many businesses, there's never been a better time to start switching to smarter energy solutions.

So what are you waiting for?

"Switching to energy efficient solutions reduces maintenance and gives you time to focus on more important tasks. RS can help you drive down your electricity costs with our ange of energy efficient solutions"

Brett Anderson
WA State Sales Manager

PowerLED IP65 Energy Saving LED Flexi Strips

- Energy saving compact LED strip with SMD LED technology
- Water resistant to IP65 level
  50000 hours working life

Power ★LED

| 7736923 | 5m, 12V dc | F10-RGB5050-12-30-IP65 |

RS PRO Machine Lights

- RS PRO range of Mahine lights are a perfect addition to your workstation
- With an energy efficient bulbs, these machine lights have a bright output, so you can enjoy shadow-free lighting for clear and comfortable working

RS PRO

7777974	24 V, 12 W, Adjustable Arm	
4333073	24 V ac/dc, 70 W, Short Arm	
4333051	24 V ac/dc, 70 W, Adjustable Long Arm	
8011190	12 V, 3 W, Flexible Arm	69330

Petzl Head Torch

- Lightweight, compact and bright:
  350 lumens at 85 g
- Three white brightness levels for comfortable proximity lighting and rapid movement

PETZL

| 1919528 | 350 lm | E089FA00 |

Peli 9490 LED Rechargeable Work Light

- Maintenance free LED array with 50000 hour life expectancy
- This rechargeable LED floodlight comprises a deployable 6 foot mast and 340° articulating 6000 lumen
- LED light head, hot swappable rechargeable 12V battery system and full time battery status indicator

PELI

| 9048118 | IP54 | 094900-0000-110E |

Solar Powered Floodlight

- Works on renewable solar energy
- Wall, decking and spike fixings included
- Adjustable solar panel angle
- Simple to install, no assembly required

solarcentre

| 8239928 | 4 LED, 1.4 W, IP44 | SS7502 |

Led Lenser P7 LED Torch

- Energy efficient power and LED light chip
  Recalibrated lens for a wider light beam angle
  Robust, yet lightweight aircraft-grade aluminium housing with new matt finish

LEDLENSER

| 7924234 | 450 lm | 9407 - P7.2 |

au.rs-online.com

Edison Energy saving light bulbs

- These smart energy-saving globes are perfect for replacing existing reflector type globes in downlights and bathroom heaters when dimming is not required
Go to RS Online for more options

HPM
A brand of legrand

2552542126	7W 700lm cool white 4000K	LR80024K
2552577554	5W 550lm cool white 4000K	LA60014KES
2552542155	8W 945lm warm white 3000K	LA60023KES

Bathroom heater replacement lamps

- The ultimate replacement globes for our Instant Heat units
- Nominal voltage: 230-240V a.c. 50Hz

HPM
A brand of legrand

2552577547	375W single pack	L375HLES
2552577546	275W single pack	L275HLES

Blade LED Batten

- Input power: 36W
- Lumen output: 3600 lm
- Efficacy: 100 lm/W

HPM
A brand of legrand

2552542625	1200mm non-dimmable - Cool White White Finish	LLF024K1200

ATIS LED Dimmable Oyster light

- Lumens output: 1750lm
- Lifespan: 30,000h
- Efficacy: 104lm/W

HPM
A brand of legrand

2552577487	17W - LED dimmable warm white light - white finish	LOL013KWE

Some businesses use up to 50%of their overall energy use on lighting. But with new technology, improving lighting efficency has never been more aordable.

Switching to LEDs will help you reduce your energy consumption. This means you can expect to see long-term cost savings on your bills. For example, if your business changes 50 halogen downlights to LED downlights, you can save up to $2300 a year. Other benefits include reduced maintenance because LEDs last longer than other lights. They will also lower your environmental impact.

The Energy Savings Scheme makes it easier for small businesses in NSW to reduce their energy use by replacing old inefficient lights with energy-efficient LED (light emitting diode) lights. The cost of purchasing the LED bulbs and having them installed by a professional is subsidised.

To see what other rebates may be available in your state, visit www.energy.gov.au/rebates

au.rs-online.com

Make light work of
LEDs

All lamps used to be specified according to the power they consume. So the higher the power, the more light they would output – meaning they'd be brighter.

This is now much harder to measure, as LEDs drive down power consumption, so it's better to compare the relative light (lumens) output of a device instead. Use our cheat sheet to help you make the right switch from incandescent or fluorescent to LED lamps.

Lumens or Watts?

Incandescent Wattage	Approx Lumens
25W	230-270 lamp
35W	250-280 spotlight 390-410 lamp
40W	440-460 lamp
50W	330-400 spotlight
60W	800-850 lamp
75W	1000-1100 lamp
100W	1500-1600 lamp

Fluorescent Wattage	Approx Lumens
Twin Tube 11W	640
Twin Tube 22W	1440
2D 16W	1050
2D 28W	2100
28D 38W	2850
Linear T5 14W	1200
Linear T5 35W	3300
Linear T5 49W	4450
Linear T8 18W	1350
Linear T8 36W	3350
Linear T8 58W	5200

What is the colour rendering index?

The colour rendering index (CRI) is a scale from 0 to 100 to measure how colours look under a light source when compared with daylight. So a reading of 100 indicates that colours under the light appear the same as they would under natural sunlight.

So CRI90+ lamps, for example, are ideal for lighting in settings such as museums and quality control departments, as accuracy is really important.

Dimmable vs non-dimmable lights

Not all lamps are dimmable, so it's worth checking if this is going to be a requirement. Also, some traditional dimmers don't work with LEDs, meaning the dimmer will need to be updated. Operating a dimmable lamp at 90-95% power can result in considerable savings while benefiting from little reduction in light levels.

Colour temperature

This describes the light appearance provided by a light source. It's measured in degrees of Kelvin (K) on a scale from 1,000 to 10,000. Choose by colour temperature to influence a room's atmosphere, for example:

2,700K – this is a warm white light, more suitable for where ambience is needed, such as in homes and restaurants.

4,000K – this emits cool white light, ideal for offices, production areas, corridors, washrooms and exterior fittings.

6,000K – this light is ideal for commercial and industrial areas.

Beam angle

The beam angle of a lamp is the angle at which the light is distributed or emitted. Lamps vary in effective beam angle to meet different applications.

Emergency lighting

The term 'maintained' or 'non-maintained' can sometimes be confusing. Emergency Lighting will either configured as:

Non-Maintained: Lighting is only illuminated when power is lost

Maintained: Lighting is always on and remains on when power is lost

Fitting

Please make sure to select the correct cap fitting when selecting your lamp. The diagrams below show some of the fitting types you may come across:

B15	B22	E14	E27	GU10	MR11	MR16 (GU 5.3)	GY6.35	T5/T8 TUBE
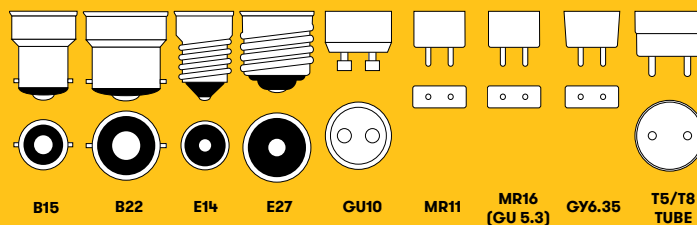
To see more, visit

au.rs-online.com

HPM 7 Day Slimline Digital Timer

- HPM 7 day digital timer can be set with up to 16 programs Each of these can be set to repeat daily, weekly, daily during the working week, daily on weekends and in a variety of other day combinations to maximise flexibility

HPM

| 1968589 | 10A | D817SLIMTPDP |

HPM Analog Plug-In Time Switch

- HPM analogue outdoor timers double pole 24h IP44 heavy dutyIdeal for use with pool and spa motors, fans and air conditioners This 24hr heavy duty timer allows user to set and forget appliances

HPM

| 1968590 | 240 V ac | D818ODDP |

Zelio RE17R Series On Delay Timers

- On-delay function
- Multivoltage
- LED state indicator

Schneider Electric

| 7912723 | 1 s-100h | RE17RCMU |

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

OMRON

| 7334959 | 24 → 240 V ac/dc 0.1 s → 100 h | H3DK-M2 AC/DC24-240 |

RS PRO Photoelectric Sensors

- The PSR series photoelectric sensors from RS PRO are economical and reliable compact devices essential for industrial environments such as conveyor belts in manufacturing plants.

RS PRO

2018160	Retro Reflection, 3m, PNP NO/NC, M12 Connector
2024453	Diffuse Reflection, 300 mm, NPN NO/NC, PVC Cable
2024476	Diffuse Reflection, 300 mm, Relay, PVC cable
2025448	Retro Reflection, 3m, NPN NO/NC, M12 Connector

RS PRO Through Beam (Emitter) Photoelectric Sensors

- These RS PRO photoelectric sensors uses the through-beam sensor principle to detect the absence or the presence of an object
- The cost-effective sensor is easy to install and adjust to the required distance, saving valuable time and resource with minimal downtime

RS PRO

2043990	5m, NPN NO
2043999	20m, PNP NO/NC
2044010	20m, NPN NO+NC

au.rs-online.com

Rethinking E-IIoT:
Energy Efficiency in Australian Manufacturing

*" **People. Profit. Planet.**
How much does it matter which one's the preferred 'P'?
If we are talking saving energy, let's cut the p-justifications short &
get down to it- the plan."*

The above, as a gist of the conversation between me & Mike, was just enough for me not to skip the rationale but rather take a step back with surface stats & drafting this out - sitting beside a lamp which I now wish was a LED one.

Mike, a dear customer of mine since last year, is working as Maintenance Engineer for a beverage manufacturer- someone I regard highly for his facility and industry insights besides his immense passion to drive change- may it be sustainability, accreditation or company balance sheets.

The apprehension around energy talks are both timeless & urgent I reckon- & always find myself on the same page as Mikey & many others- specially amid Covid19 climate & all pre-&-post-case pictures painted around it.

A quick, hitting stat-hit looked like this:

- Half of manufacturing businesses in Australia have energy costs greater than 25% of EBIT and the sector spends an estimated $14b on electricity and gas each year

- As a sector, Australian manufacturing is the third largest consumer of energy, accounting for almost 18% of Australia's total consumption sitting behind the transport & electricity sectors who use 27.5% each. Australian manufacturing is also among the most energy intensive of countries in the OECD (Australian Manufacturing Insights by ERM 2020)

Though this reflects in part the high percentage of basic metals and chemical manufacturing in Australia's industrial portfolio, which sits at 67%. It also presents serious economic, competitive and environmental implications for businesses within the sector and makes energy productivity a key challenge to be addressed.

Now, when it comes to 'the plan' part, I have my bets on the big idea- 'Zero Net Emission by 2050' despite the controversies around the government's stand on it (Katherine Murphy- The Guardian reporter 2020). According to analysis by IGCC (Investor Group on Climate Change ANZ), if Australia keeps to its current climate policies, investment worth $43bn would be lost over the next five years, growing to $250bn by 2050.

On the flip side, Australia could unlock an investment boom of $63bn over the next five years if it aligns its climate policies with a target of net zero emissions by 2050. IGCC finds the investment opportunity created by an orderly transition to a net zero emissions economy would reach hundreds of billions of dollars by 2050 across sectors

Being said that, my confidence for bets lies more for the simpler, how-to's & efficient implementation of it within individual facilities- & as buzzy it may sound- it is IIOT & digital initiatives as my gamechanger of it all.

E (ENERGY)- IIOT ~

Moving to better energy efficient operations requires planning and capital. The AIE reported that limited internal capital availability and lack of data on current energy consumption are two biggest barriers that manufacturers face when they're planning energy saving projects. However, there are IIOT solutions that companies can deploy with minimal capital outlay. Energy Efficiency council CEO Luke Menzel highlights "it's not about replacing large pieces of equipment; it's about ensuring it's running as productively as possible. Many more manufacturers are looking at these issues closely because of the price spikes."

A company can install a network of wireless devices connected to an AI-driven control system for about one-tenth of the cost of a comparable hardwired system. In some cases, a wireless system can monitor equipment in areas where wired systems cannot reach, due to distance or concerns about wiring installation safety. These sensor networks can help companies maximize their ROI on their current equipment before replacing it with 'smart' equipment. And when it is time to invest in new IIOT-enabled equipment, companies can realize even more efficiency gains.

IIOT systems provide real-time monitoring and analytics of plant equipment and building system's temperature, peak/non-peak usage times and overall time in use to help companies identify areas for improvement.

3 of the key areas where IIoT monitoring can help companies harvest the low-hanging energy efficiency fruit are:

MORE EFFICIENT LIGHTING SYSTEMS WITH IIOT CONTROLS

LED lighting requires only half as much energy use as compact or tube fluorescent lighting, even without smart controls. With IIoT capability, LED systems can achieve up to 99% energy cost savings. Smart LED systems achieve these efficiency gains mainly through monitoring room occupancy and available light. IIoT-enabled LED system can switch off the lights in a space where no one is working and turn them back on when people enter the space. The system can also monitor changes in the level of natural light coming in through windows and skylights. Based on that real-time data, the system can adjust LED brightness in that space for optimal visibility without energy waste.

SMARTER TEMPERATURE MANAGEMENT WITH IIOT SENSORS

Manufacturers can also see energy savings with sensor-enabled smart management of temperature controls for buildings and equipment. As with lighting, room temperatures can automatically adjust based on the number of occupants in a space, relative humidity, and the prescribed optimal temperature range for that space. Real-time temperature monitoring can also help plant managers keep equipment running within its proper temperature range and know immediately when there's a problem. This gives managers the ability to intervene immediately when, for example, a freezer space gets too warm for cold chain compliance or a machine drive begins to overheat. When managers know about these problems as they arise, they can reduce equipment downtime and product damage. Over time, the system can collect enough temperature readings to enable AI-driven predictions that can head off some equipment problems, allow for predictive maintenance, and set more efficient operating schedules.

REAL-TIME ADJUSTMENTS IN OPERATING SPEED AND EFFICIENCY:

Adjusting equipment speed to meet real-time production demands can generate dramatic energy savings. For example, IIoT-enabled variable speed drives can cut energy consumption by 50% or more. This fact alone can make variable speed functions with the investment. Smart equipment can also monitor and adjust water usage for peak efficiency in factories and on farms. IIoT-enabled systems can also help food and beverage manufacturers maintain cold-chain compliance to prevent the waste of food, fuel, and agricultural inputs.

Every business has good reasons to reduce energy consumption. We might want to control costs, achieve sustainability targets, gain environmental accreditations or boost operational efficiency. Whatever your goal, RS Components can help you achieve it - with the next generation of energy-efficient solutions. Our predictive search and technical support can help you to find the products you need faster. Saving time on product selection and helping you to deliver major reductions in consumption.

As the demand for energy grows over the next two decades, the most energy efficient manufacturers will be in the best position to compete, thrive, and enjoy a positive brand reputation. IIoT-enabled monitoring systems and equipment can deliver better energy efficiencies now, and in the years ahead.

As Richard Jeffers (Technical Director Northern Europe at RS) says "….access to a range of sensors is only part of the overall picture; smart maintenance is more than just technology and products, it's actually a way of thinking".

Article by
Sakib Iftekhar
Internal Sales Team Lead
RS Components AU

iEM2000 DIN Rail Energy Meters

- Cost-attractive single phase DIN Rail mountable energy meters - ideal for local energy monitoring
- 40A direct measure (iEM2000 models) & 63A direct measure (iEM2100 models)
- Electromechanical display (iEM2000 models) and LCD display (iEM2100 models)
- On-board Modbus or M-Bus communication options
- MID-compliant (selected models only) providing certified accuracy and data security

Schneider Electric

9139637	230V 63A	A9MEM2100
9139661	230V 40A	A9MEM2000

Legrand EMDX3 3 Phase LCD Digital Power Meters

- Displays electricity consumption in kWh and other values such as current, active energy, reactive energy and power
- 8-digit LCD display
- Maximum indication: 99999.99 kWh

HPM

8976835	63A, 4 modules Pulse output, direct connection	004682
8976781	5A, 4 modules Pulse output, CT connection	004685

Finder 7E 1 Phase LCD Energy Meter

- Display of total or partial (resettable) energy consumption: kWh, kVAh or kvarh
- Scroll to view the following instantaneous values: V, A, PF, kW, kVA, kvar, Hz and direction of power flow
- 7 digit backlit LCD display
- Programmable SO pulse output for remote energy monitoring

finder

1829941	90.4mm Cutout Height	7E.64.8.230.0010

PowerLogic™ PM5000

- The PowerLogic™ PM5000 power meter is the ideal fit for cost management applications, with enhanced measurement capabilities
- It allow the user to pin-point energy savings and perform a high level power quality assessment of the local electrical network
- The 96×96mm unit has a graphical display that enables data for all phases, neutral & ground to be monitored simultaneously

Schneider Electric

8417762	PM5300 Power Meter, Serial, 2DI-2DO Out	
8417765	PM5100 Power Meter, Pulse Out	
8417768	PM5100 Power Meter, Pulse/Serial Out,MID	
8417774	PM5300 Power Meter, ETH, 2DI-2DO Out	

PowerTag Wireless Energy Sensor

- Acti 9 PowerTag® not only measures energy and power in real time, it also monitors your assets and immediately alerts your smartphone in the event of failure Simply 'tag' your circuit breakers, link these PowerTags to the Smartlink concentrator and data can then flow seamlessly into your BMS or accessible via the Smartlink embedded web pages
- Easy to install and setup using Acti 9 Smart Test free software PowerTag is installed with no additional wires - cutting installation time to just a few minutes, even for existing panel installations
- Can be used with Acti 9 series breakers or most other MCBs on the market

Schneider Electric

1348658	Powertag Sensor 1PW MAX 63A	A9MEM1520
1348659	Powertag Sensor 1PN UP MAX 63A	A9MEM1521
1348660	Powertag Sensor 1PN DOWN MAX 63A	A9MEM1522
1348661	Powertag Sensor 3P MAX 63A	A9MEM1540

Phoenix Contact EEM Energy Meters

- 80% maximum operational relative humidity
- Screw connection method which makes it easier for installation

PHOENIX CONTACT

1743464	1 W, 5 A, 500 V	2908578
1743465	1 W, 5 A, 500 V	2908581

au.rs-online.com

The Importance of **Reliable Energy Data**

Reliable energy data, recorded and tracked over time, can be the key to unlocking year-on-year energy savings and improving asset management.

You can set energy and greenhouse emissions targets, regularly report on these targets and track the impact of energy-saving opportunities over time. There may be a variety of reasons for tracking and analysing your energy usage, depending on your situation. Your primary reason might be related to running costs, building performance, customer expectations, leasing obligations, production efficiency, continuity of service, sustainability goals or reporting and compliance. From all of these starting points, accurate, up-to-date and usable information about your energy usage can open the door to a whole range of benefits and improvements relating to energy efficiency.

How can metering and monitoring benefit your business?

Electricity metering and monitoring can help you to:

- Save energy, money and time, and operate your facility more effectively
- Create an energy management plan and set up an energy management system
- Target opportunities for improvement
- Track and report your energy performance improvements
- Predict the savings impact from purchasing new, more-efficient
- equipment such as chillers, pumps or lights
- Allocate costs to tenants or separate business units
- Comply with regulations
- Secure funding for energy efficiency upgrades.

"RS works closely with the leading brands to bring you a vast range of electricity metering and monitoring productse. Contact us and let us help you decide which systems will best meet your needs."

Mike Lander | Account Manager RS Components NZ

TeSys Range DOL Starters

- Predominantly used for motor driving workshop machinery, large fans, water pumps and similar types of equipment
- Fitted TeSys range components
- IP65 protection rating

Schneider Electric

7447790	10 Kw	LE1D18N7
7447807	15 kW	LE1D25N7

Sirius 3RA61 Compact Direct Starter

- Three wide voltage ranges and 5 wide setting ranges for the rated current.
- Automatic device reset in case of overload and differentiated detection of overload and short-circuit

SIEMENS

500913	5.5 kW 3-12A 24vdc	3RA6120-1DB32

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

PHOENIX CONTACT

7191790	1 kW, 24 V dc, 2.4 A	2900574
7191768	1 kW, 24 V dc, 2.4 A	2900567
7191759	4 kW, 24 V dc, 9 A	2900421
7191746	4 kW, 24 V dc, 2.4 A	2900414

RS510 Series Inverter Drives

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

RS PRO

1223410	3.7 kW, 10.1 A	
1223411	0.75 Kw	
1223413	1.5 Kw	
1223414	2,2 Kw	

56 Series DOL Starters

- IP66 rating
- Ambient air temperature for operation is -25 to 75℃

2141832	4 kW, 240 V, 3 Phase, IP66	56DOL9/6-GY
8264606	0.4 kW, 230 V ac	3G3MX2-AB004-V1
7051774	7.5 kW, 400 V, 23 A	3G3MX2A4075ECHN

Control your motor speed

A variable speed drive (inverter drive) can reduce energy consumption by as much as 60% when used with fans or pumps which would normally run at either full speed or zero speed. A small reduction in speed can give significant savings. For example, a centrifugal pump or fan running t 80% speed consumes only half of the energy compared to one running at full speed.
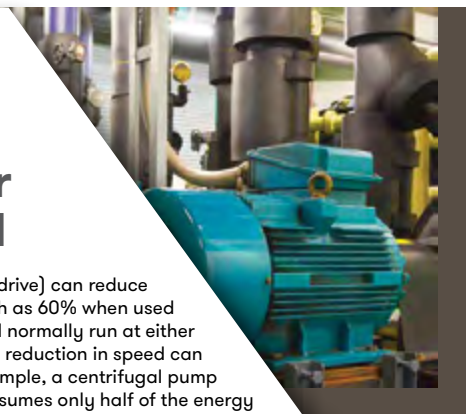
Energy and current measuring technology

Reduce costs, increase efficiency:
Systematic energy management is an ideal tool for continuously increasing energy efficiency in companies and organisations.

Identify potential cost savings for the cost-effective and environmentally-friendly operation of your machines and systems.

At RS, we stock a range of Phoenix Contact products for energy and power measurement.

PHŒNIX CONTACT

INSPIRING INNOVATIONS

Industrial Motors

A Quick & Easy Selection Guide

Nobody needs to tell you how useful motors are in industrial settings. From power tools and blowers to conveyors, robotic arms and pallet manipulators, they are everywhere.

If you find you need to choose a motor, it's sometimes difficult to know where to begin. Here's a quick guide to help you better understand the variables that go into industrial motor selection.

General Motor Characteristics to Know

Here are some things you'll need to ask before finding the right motor:

- Do you require a single-speed motor? This type of engine runs at an approximate or fixed speed with a simple on/off control and doesn't require acceleration or deceleration. Either DC or AC motors are suitable in fixed-speed applications.

- Do you require a variable-speed motor? If your application requires precise speed changes, a variable-speed AC or DC motor will work for you. Centrifugal-based pumps, conveyors and fans are possible applications.

Apart from speed, the variability or constancy of several other variables apply as well:

- **Horsepower**: Cranes, conveyor belts and some types of pumps are all examples of where variable-horsepower motors come into play.

- **Torque**: Machines tasked with spooling or winding materials may require motors with constant torque but variable horsepower.

- **Position control**: Precise position control is a necessity in linear actuators and any place where a machine must hold multiple positions in sequence extremely accurately. Steel and paper mills are some of the primary benefactors.

- **Speed**: Motors are usually most efficient when allowed to run at or near their top speeds. That's why it's important to know what you'll require and whether it needs to change.

- **Current**: Motors must deliver predictable torque for you to get your intended work done. A motor's operating current expresses how much it must draw to achieve that torque.

- **Voltage**: Higher-voltage motors deliver higher torque. Naturally, they require an environment that can supply the voltage needed to function. Too much can result in a loss of power or the motor itself.

A closer look at types of Industrial Motors:

One of the first factors to understand is whether your application is best served by a brushed or brushless motor. Here's a brief rundown:

Brushed Motors

Brushed motors are put to use in a variety of lower-budget industries and basic functions, including in cranes, paper-making machines and steel mills, among many others.

They're simple in construction, and that makes then inexpensive. They're also good for achieving high torque and solid control at a range of lower speeds.

The downside is that the brushes require regular maintenance. However, subtypes of brushed motors can serve specialized functions. Shunt-wound brushed engines are useful in conveyors and vacuum applications owing to their constant speeds. Permanent magnet motors are better in servo systems, robotics and low-torque applications.
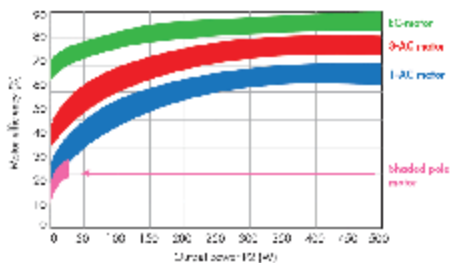
RS PRO Brushed DC Motor | Stock No: 901-3311
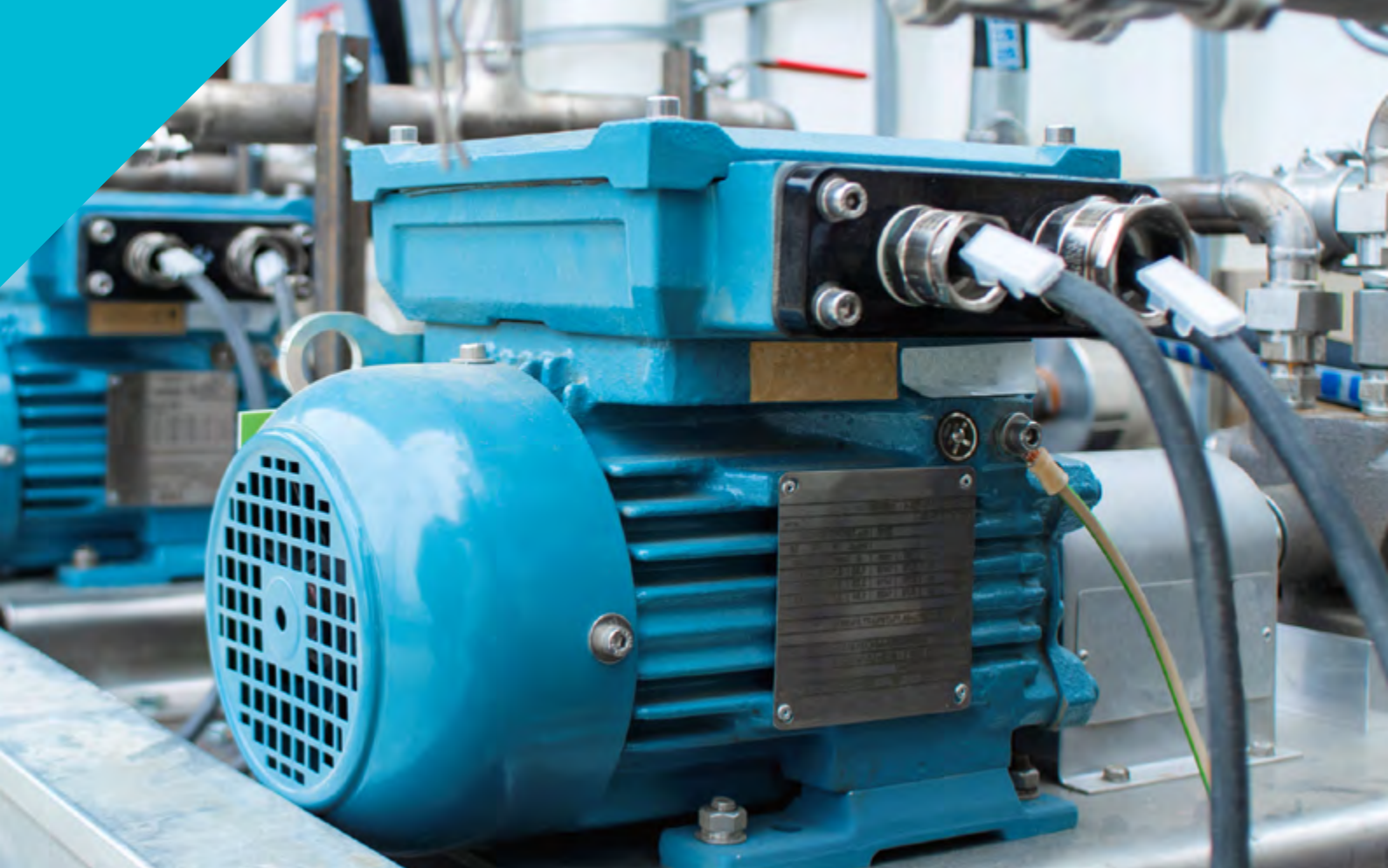
"DC motors are 30% more energy efficient than AC motors"

Brushless Motors

These require less maintenance than brush motors and generate less noise. Compared with brushed DC motors, they're also more efficient and sport a better power density. They're typically found in positioning, actuation and servo operations.

Brushless motors are more efficient than brushed motors, even though they're capable of operating at higher speeds. They usually log more hours of operation over their service lives, too.

RS PRO Brushless DC Motor | Stock No: 536-6024

Other Industrial Motor Types

Here are some of the other industrial motor classes and types that are worth understanding in better detail:

- **Stepper or torque control motors:** Some industrial applications require very high holding torque to provide stability in multistep operations. Stepper motors deliver in those cases, at the expense of drawing lots of current almost constantly.
- **Vibration motors:** Some applications require a specific type of engine to deliver haptic feedback to the user. This includes some toys and consumer electronics, as well as medical and emergency alert devices.
- **AC motors:** AC motors are popular because they are economical with their electricity consumption at startup and are fairly simple to build and rebuild. They're generally durable and require less frequent maintenance intervals. AC motors are good for applications that need fixed speeds without gear changes.
- **AC single-phase and three-phase motors:** AC motors come in single- and three-phase varieties. Single-phase AC motors are less powerful, but therein lies their advantage. Three-phase engines allow the transmission of a greater amount of electrical power. That's important for infrastructural and heavy equipment needs.

Other Information on Choosing Industrial Motors

If you're confused about AC versus DC motors and how it applies to power, don't be any longer. DC power is more consistent in voltage than AC power and DC motors are simultaneously more efficient than AC motors. In fact, some accounts say they're up to 30% more efficient.

For general industry purposes, AC brushless motors are coming into wider favour because they don't need as much maintenance as some of the other options. The relative complexity of DC motors compared to AC motors makes them burdensome to repair.

The differences between motors that use bushings and those that use bearings should weigh on your decision as well. Motors with bearings perform radial movements of loads better and outlast motors with bushings.

With this rundown of some of the basics of choosing industrial motors, you should be on firmer footing. There are lots of variables to weigh, but also many industrial applications to suit. There are several choices because of all the general and speciality applications that require power and locomotion.

The RS range of Industrial motors has a variety of high quality solutions to suit your application.

Optimising HVAC Systems

Unlike other more costly energy-efficient strategies, such as plant upgrades, Improving the performance of HVAC via control systems can provide immediate reduction in your energy use and energy costs.

Heating, ventilation and air conditioning optimisation opportunities:

Strategy type	Action	Potential energy savings
System supervision	Optimise start/stop settings	Up to 10% total energy
	Optimise space/zone temperature set points and ranges	Up to 20% HVAC energy
	Change master air handling temperature signal	Up to 15% HVAC energy
	Stage compressors and chillers	Up to 10% HVAC energy
Plant controls	Optimise hot water, chiller and condenser water temperature sets	Up to 15% HVAC energy
	Reset duct static air pressure	Up to 30% of energy used by fans serving ducts
	Retrofit electronic expansion valves to compressors	Up to 15% compressor energy
Ventilation and air flow	Use outdoor air directly for cooling (economy cycle)	Up to 20% compressor energy
	Use 'night purge'	Up to 20% compressor energy during start-up
	Use demand control ventilation for carbon dioxide and carbon monoxide control	Up to 20% fan energy in occupied spaces and 80% in carparks
Variable speed controls	Set up variable secondary chilled water pumping	Up to 30% on secondary chilled water energy use
	Install variable speed drives (VSDs) on condenser fans	Up to 30% of fan energy
	Install VSDs on water pumps for water cooled condensers	Up 30% chilled water pump energy
Best practice and maintenance	Adopt an integrated energy management plan	Up to 50% total energy
	Train staff in energy mamangement practices	Up to 10% total energy
	Carry out regular maintenance	Up to 20% HVAC energy

Manage your HVAC

Heating and ventilating a building can be a high cost area, with plenty of opportunities for waste in terms of lost energy or systems running when they don't need to be.

Timers, thermostats, insulation, more efficient ways of heating, cooling, moving air and providing hot water can all play their part in reducing costs.

Stainless Steel Ball Valves

- High pressure - 1000psi/63 bar - reducedbore quarter-turn stainless steel ball valves for flow control
- Suitable for temperatures of -20℃ to 200℃
- Can be used with water, steam, water based liquids, oil and gas

RS PRO

4992795	½in BSPP F-F
4992802	¾in BSPP F-F
4992818	1in BSPP F-F
4992824	1 ¼in BSPP F-F

RS PRO Black Rubber Pipe Insulation

- Fully flexible rubber Class 0 pipe insulation supplied in 2m lengths (Price per pack)
- Suitable for frost protection, energy conservation and pipeline protection
- Larger diameters and grey versions also available, please visit the RS website

RS PRO

486025	15mm ID, 25mm wall, 5 pack	IRTJJE250154
486081	22mm ID, 19mm wall, 5 pack	IRTJJE190224
486053	22mm ID, 25mm wall, 3 pack	IRTJJE250223
486057	28mm ID, 19mm wall, 5 pack	IRTJJE190284

TRV4 Thermostatic Valve

- Bi-directional flow capability - suitable for flow or return with the head either vertical or horizontal
- Angle pattern thermostatic radiator valve with integrated sensing head
- ½ in BSP with non-sticking valve internals

Drayton

3121712	+10 to +30℃	07 05 090

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HVAC & PLUMBING

Standard Pleated Panel Air Filters

- Uses patented Kimberly Clark Intrepid® filter media, delivering a constant level of filtering over its life with energy savings of up to 40%
- G4 grade
- Price each in a pack, quantity as stated with other sizes available

7302873	18 × 18 × 2 inches, pack of 12
7302870	20 × 16 × 2 inches, pack of 12
7302861	20 × 20 × 2 inches, pack of 12
7302864	24 × 20 × 2 inches, pack of 12

STEGO Enclosure Thermostat

- Large setting range
- Small size 60 × 33 × 43 mm
- Plastic casing according to UL94 V-0, light grey

6974446	0 → +60 °C	01141.0-00

Damper Actuators

- For adjusting air dampers in ventilation and air-conditioning systems
- Compatible with all leading makes of HVAC controls Popular items shown, other models also available

5041191	Open/close, 5Nm, 110-240Vac	LM230A

PVC Reinforced Aluminium Foil HVAC Ducting

- Features a covered, metal, corrosion-resistant spiral helix, which allows the ducting to be compressed and provides good crush and kink resistance during handling and installation
- Suitable for operating temperatures ranging from -5 to +90°C

6798699	100mm diameter

Grey Steel Vent Grille

- For ventilation by convection
- Easy 4-screw assembly

5170025	110 × 330mm	2543235

Silver Aluminium Louvre

- For external use Louvres blades with an internal rain lip set at a pitch of 38mm and an angle of 45°
- Undrilled flanges 32mm wide with fully welded and linished mitre corners

432817	501 × 501mm

Energy Saving EC Axial Fans

• Energy saving electroncally commutated AC motors
• IP54 rated
• Maintenance free ball bearings

ebmpapst

7013592	1000m³/h, 26W	W1G230-EB89-01

Vapo Bearing 12vdc Axial Fan

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

2025419	12.2cfm, 560mW, IP20	MF60101V3-1000U-A99

RS Pro AC Dual Bearing Axial Fans

• Range of AC dual ball bearing axial fans offering a cost effective cooling solution without sacrificing on quality or reliability
  Robust die-cast aluminium frame, ideal for industrial applications
  PBT UL94V-0 thermoplastic impeller

RS PRO

6196961	186.9m³/h, 24W
6196804	186.9m³/h, 15W
6196826	186.9m³/h, 15W

ACi4400 Energy Saving AC Axial Fan

• Spark resistant construction (full encapsulation)
• Highly efficient analogue Control input (5 - 10VDC)
• Wide voltage range

ebmpapst

1917813	175m³/h, 4.6W, IP65	ACi4400HHAU

Fantech Minitube Series Axial Fan

• Includes robust mounting feet
• lightweight
• Low noise level

FANTECH TRADE
MADE FOR TRADE

1818939	46W, IP44	MTP132

DID YOU KNOW?

In a commercial building, HVAC electricity consumption can typically account for around 40 per cent of total building consumption and around 70 per cent of base building electricity consumption. HVAC optimisation is sometimes as simple as changing control algorithms, altering control schedules and set points, and carrying out minor mechanical repairs and alterations to existing equipment and systems.

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The high cost of energy

Over the 10-year life of an average compressor system, energy is the largest cost component.

When combined with ongoing maintenance costs, it's estimated that energy makes up to 85% of the total cost of compressed air.

10%	5%	8%	77%

■ Purchase   ■ Installation   ■ Maintenance   ■ Energy

Figure 1: Average compressor costs over 10 years

Running your compressed air system efficiently is the key to reducing these costs. In addition, an efficient system can go hand-in-hand with operation and maintenance efforts that target system reliability.

Energy Efficiency Module

- The Festo service unit combination MSE6-E2M-5000-FB13-AGD main components of the are: shut-off valve, flow sensor, pressure sensor and bus node. The fieldbus interface allows connection to a higher-order controller, e.g. a system or machine controller

FESTO

2029423		MSE6-E2M-5000-FB13-AGD
2029324		MSE6-E2M-5000-FB36-AGD

MS Series Solenoid Actuated On/Off Valve

- For use in pressurising and venting pneumatic applications
- The valve has three voltage ranges that can be selected and has an optional pressure sensor
- Ducted exhaust is possible via a threaded connector with a silencer

FESTO

1366863	G¼", 3 / 2	MS4-EE-1/4-10V24

MS-LR Series Pressure Regulators

- The MS-LR series feature regulators which are available with and without secondary venting
- They benefit from a high flow rate with minimal pressure drop
- Two pressure gauge connections allow for different fitting options, with a return flow option already integrated within the pressure regulator

FESTO

1215659	G ¼", 0.3bar to 7bar	MS4-LR-1/4-D6-AS
1215681	G ½", 0.5bar to 12bar	MS6-LR-1/2-D7-AS

RS PRO Pressure Refulators

- RS Pro pressure regulators for pneumatic networks
- The modular system allows individual combinations with other RS Pro air treatment components by using RS Pro air distributors and connection plates

RS PRO

1761723	G ¼
1761725	G ½
1977902	G 1/8
1761726	G ¾

FESTO

Compact, easy to clean valves!

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 prefect 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   **Temperature:** -5...150° C
Media pressure: 1...6 bar   **Flow (k_v):** 0.7...18m^3/h

RS

With unprecedented times challenging businesses, it's more important than ever to optimise your bills and take control of your costs. Small, everyday changes in your power consumption can be easy to make. They don't cost much, but they can add up to real energy savings.

energy saving checklist

LIGHTING

- ✔ Switch off all unnecessary lights.
- ✔ Use dimmers, motion sensors, or occupancy sensors to automatically turn off lighting when not in use to reduce energy use and costs.
- ✔ Turn off lights when you leave at night.
- ✔ Use natural lighting or daylighting. When feasible, turn off lights near windows.

OFFICE EQUIPMENT

- ✔ Replace CRT monitors with LED or LCD monitors.
- ✔ Unplug or shut-down equipment when not in use.
- ✔ Use power-saving modes on equipment
- ✔ Choose laptops over desktops
- ✔ Opt for a small screen
- ✔ Upgrade all outdated equipment
- ✔ Print only when necessary

PLUMBING / WATER

- ✔ Install low-flow toilets, urinals, faucets
- ✔ Look for and repair any leaks

COMPANY VEHICLES

- ✔ Switch to hybrids or alternative-fuel fleets
- ✔ Encourage carpooling

EMPLOYEE EDUCATION

- ✔ Promote and incentivise sustainability in the workplace
- ✔ Use coffee mugs instead of disposable cups.
- ✔ Reduce business travel by increasing Web conferencing and training capabilities

HEATING AND COOLING

- ✔ Ensure HVAC ductwork is well insulated.
- ✔ Set your thermostat to 20 degress celcious

"The secret to reducing energy consumption in the workplace is getting your employees on board, making small changes in their daily habits at work"

- Steve Latta
RS Operations Manager ANZ

DESIGNING TOMORROW

Power electronics will be the enabling technology that will provide efficient, intelligent and optimal use of these energy resources, yielding a more secure, flexible and sustainable way of life.

Design future products which will enable buildings to be smarter, easy to work in, and more connected.

TSR 1 Series Step-Down Switching Regulators

- Great replacement for linear regulators
  Up to 96% more efficient with built-in
  capacitors and short circuit protection
- Don't require heat-sink
- Output accuracy (±2%), standby current 2mA

TRACO POWER

6664385	15-36V input, 12V output (each)
1247658	15-36V input, 12V output (tube of 10)

STWIN SensorTile Wireless Industrial Node Development Kit

- Multi-sensing wireless platform implementing vibration monitoring and ultrasound detection
- Updated version of STEVAL-STWINKT1, now including STSAFE-A110 populated, BlueNRG-M2S module and IMP23ABSU MEMS microphone
- Built around STWIN core system board with processing, sensing, connectivity and expansion capabilities
- Ultra-low-power ARM Cortex-M4 MCU at 120 MHz with FPU, 2048 kbytes Flash memory (STM32L4R9)

2102301	Board
2010404	Sensor
2014414	Bluetooth module

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)

maxim integrated.

1906395	H version (pack of 5)	MAX44284HAUT+T
1906383	F version (pack of 5)	MAX44284FAUT+T

PROFET™ Power Switches

- PROFET™ - protected MOSFET - is Infineon's solution for power switch ICs, suitable for automotive and industrial applications
- Intelligent power switches consisting of a DMOS power transistor and CMOS logic circuitry for complete built-in protection
- The PROFET™ series offer protection against overload, overvoltage, short-circuit, excessive temperature, ground and power supply loss

Infineon

1109104	1.8A, 4.7 → 42V (pack of 5)	BTS410E2E3062ABUMA1
1107772	8.5A, 5.0 → 34V (pack of 4)	BTS621L1E3128ABUMA1
1109094	8.7A, 5.5 → 30V (pack of 5)	BTS3256DAUMA1

ENERGY SAVING COMPONENTS

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

CYPRESS

1244406	Single Unit	CYBLE-012011-00

Data-Logging Memory

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

CYPRESS

1242933		CY15B104Q-SXI

RGB LED Lighting Shield with XMC1202

- The Infineon RGB LED lighting shield is an evaluation board that is suitable for LED light engines and lamps
- Created to be easy to configure, it is also ideal for fast prototyping and evaluating LED lighting applications
- The RGB LED Lighting Shield is able to drive up to three LED channels with constant current

Infineon

1113728	KITLEDXMC1202AS01TOBO1

AmbiMate Sensor Modules

- Design resources are freed and time to market is accelerated
- Simplicity of popular I2C communication protocol
- Event out pin for real time motion detection
- Space saving compact design

TE

1932012	Sensor module	1-2314291-2
1876133	Development kit	2331211-3

PAC1934 USB C Power Meter Development Board

- USB type C Power Monitor
- PAC1934 Quad DC Power and Energy Accumulation
- Provides information on: Bus voltage, Current, Instantaneous
- Power consumption, Energy accumulation, CC pins voltage

MICROCHIP

1877666	ADM00921

Sensirion SHT31 Smart Gadget

- SHT31 humidity and temperature sensor
- LCD display for humidity, temperature and dew point in °C or °F
- Bluetooth Low Energy (BLE) connectivity to iOS and Android smartphones

SENSIRION
THE SENSOR COMPANY

1237130	SHT31 Smart Gadget

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Your Partner in
MRO Procurement

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

Our extensive range of products, plus our choice of ordering and delivery options are designed to minimise your downtime and help you get everything you need, exactly when you need it.

- Gain more control over orders and spend
- Save time
- Boost visibility
- Improve reporting
- Speed up processing

Product Plus

When you're sourcing products from many different vendors, it's time consuming and costly. You can reduce the number of orders you create with our RS Product Plus service. Our team can souce products that are not on our website, so you can reduce your purchase orders.

eCommerce Solutions

Our solutions help you to create an efficient process whilst providing the information to manage procurement as effectively as possible. Our specialist teams provide full project support for your implementation.
Ask us about:

- **PurchasingManager**
- **Punchout**
- **eOrdering**
- **eInvoicing**

Learn more at
au.rs-online.com/procurement

RS

DataTuff® Industrial Ethernet Cat 7 Moderate Flexing Cable

- High shield coverage to maintain signal integrity in the industrial noisy environment designed to withstand environmental and mechanical hazards, from extreme temperatures and sunlight, to solvents, oils, chemicals and moisture

7248852	Unterminated/Unterminated, Reel of 305m	74005PU.00305

RS PRO 2 Core Industrial Cable, Unscreened

- Operating temperature: -5 °C to +80 °C
- Conductor resistance (20 Ω/km): 55 max.
- Operating voltage: 250 V

1959506	Grey 100m 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

321168	Unterminated to AS/NZS 3112, 2.5M
321219	C19, IEC to C20, IEC, 2M
445740	C14, IEC to C14, IEC, 5M

Transparent Solder Sleeve

- Temperature range -55°C to +125°C
- Terminate bare or tin plated conductors
- Supplied in a storage case with locking lid

5425612	0.6 - 1.95mm	B-155-3802

CY Control Cable

- Screened cable provides excellent interference-free transmission
- Suitable for fixed installations or temporary flexible use
- Other numbers of cores and CSAs are available
- Supplied on 50m reels

8274133	2 core 0.75mm²
522519	3 core 0.75mm²
522428	4 core 0.75mm²
8274155	5 core 0.75mm²
8274161	7 core 0.75mm²

Cable Tie Tool Boosts Efficiency

- Pneumatic tool built to apply heavy-duty cable ties efficiently and consistently
- Provides consistent tensioning and automatic flush cutting
- The housing is made of plastic with durable reinforced glass-fibre, with a holding ring for balance and infinitely adjustable tension force

HellermannTyton

1896078	MK7P for ties up to 4.8mm	110-07100 MK7P-PL/GF-BK
1439310	MK9P for ties up to 13.5mm	110-09100 MK9PEU20MM

Panel Mounting Socket / Coupler

- Supplied cable glands accommodate cable diameters 3.5 to 8mm
- Shielded connectors maintain required screening
- Overall diameter 38.1mm, Overall length 77.5mm

4686226	Cable Connector	PX0834/B
4686232	Panel Mounted Coupler	PX0833

Deutsch 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

425973	20AWG to 12AWG	HDT-48-00

Amphenol Cat5e RJ45 Connector

- Mechanical coding/polarization (4 positions)
- The plug connects into a receptacle using a fast turn bayonet coupling mechanism (MIL-C26482 type)
- IP67 rating

5369455	Shielded	RJF 21 B SCC

RJ Industrial Male Cat6 RJ45 Connector

- Excellent quality
- Highly reliable
- Mating cycles are greater than or equal than 7500

7148544	Cat6, IP20	09451511560

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
- Gel sealing for use in harsh environment applications and clear body for visual inspection

1300889	2 × 1.5-2.5mm²	2213600-1
1300891	1× 0.75-1.5mm² / 1× 1.5-2.5mm²	2213600-3
1300890	1× 0.75-2.5mm² / 1× 1.5-4mm²	2213600-2
1614013	2 × 1.5-2.5mm², box of 39	2213600-1

RS PRO Solenoid Valve Connectors

- RS PRO Range of solenoid valve connectors have a wide range of industrial applications, including fluid power pneumatic and hydraulic systems and signal transmission in magnetic valve

8118323	Socket Pg9 Led 3 Pole + Earthing-24vdc
8118257	Socket Pg9 3 Pole + Earthing-Black
8118231	Flat Plug 3 Pole + Earthing
8118247	Flat Plug 3 Pole + Earthing Cd - 8 Mm

RS

Electresafe Power Centre with USB

- Ideal for construction sites and workshops, Site suitable AS/NZS3012
- Built in RCBO protection (combines the features of a RCD and MCB)
- RCD (Residual Current Device) provides a fast power cut off to reduce the risk of electrocution
- MCB (Miniature Circuit Breaker) protects the power centre from damage under overload conditions

HPM

| **1968588** | 2 × 2.4A charging USB ports | REPC410USB |

Socket plug extension

- 3 pins flat
- Rated 15A
- Product comes in 3 parts - Screw, the back lead and insert top

HPM

| **1968583** | Flat Grey | 7P15GY |

RS PRO IP44 Panel Mount Industrial Power Sockets

- These heavy-duty power sockets from RS PRO are a good choice for hardworking settings like workshops and warehouses
- They are fitted with a protective socket cover and tough mounting flange, making them well-suited to harsh industrial environments
- An IP44 rating assures you it's splash-proof, so it won't suffer damage from contact with liquids or chemicals

RS PRO

4641627	2P+E, Blue
4641661	3P+N+E, Red
6685395	2P+E Right Angle, Blue
6685408	3P+N+E Right Angle, Red

4-way switched powerboard with USB A&C

- USB-C 3A charging port
- 4- way power boards with USB
- 2 USB ports provides 5A max
- Overload protection
- Surge protection with indicator

HPM

| **1968585** | 10 A, 230 → 240 V ac | D104PAUSBACWE |

30m Extra heavy duty tradesman extension lead

- Extra heavy duty tradesman extension leads with 30m length cable
- With thicker, UV stabilised insulation and 100% copper wiring they're tougher, safer, less likely to catch fire or crack under the midday sun
- Fully moulded and clear plug and socket for easy safety inspection

HPM

| **1968593** | 10A, 2400W 30m lead red/black 3 core 1.5mm² | R2930 |

RS PRO IP44 Glanded Cable Mount Connectors

- IP44 ingress protection
- Ribbed finger tab on lid for one handed opening
- Made from a toughened engineering plastic
- High thermal stability

RS PRO

7249108	2P+E, Blue
7249110	3P+N+E, Red
7249114	2P+E, Yellow
7249117	3P+E, Red

Energy Efficiency Resources

ACRONYMS

ABGR	Australian Building Greenhouse Rating
ACP	Accredited Certificate Provider
AGO	Australian Greenhouse Office
CA	Carbon Abatement
CC	Combined Cycle
CCHP	Combined Cooling, Heat & Power
CCPP	Combined Cycle Power Plant
CEEL	Certified Energy Efficiency Leader
CEES	Certified Energy Efficiency Specialist
CMVP	Certified Measurement and Verification Professional
COP	Coefficient of Performance
DM	Demand Management
ECM	Energy Conservation Measure
EEC	Energy Efficiency Council
EUA	Environmental Upgrade Agreement
EVO	Efficiency Valuation Organization
GHG	Greenhouse Gas
IAQ	Indoor air quality
M&T	Monitoring and Targeting
MVP	Measurement and Verification Plan
NABERS	National Australian Built Environment Rating System
VO	Voltage Optimisation

Website Links

Businesses who want to be more environmentally friendly can find a range of resources online. Sources of useful information about efficiency include governmental agencies, international organisations and energy companies.

Measurement is essential when it comes to improving efficiency, which is why many of the resources below include not only information but also online tools for measuring energy use and environmental impact.

Australian Building Codes Board	www.abcb.gov.au/
Australian Institute of Refrigeration, Air Conditioning and Heating	www.airah.org.au
Department of Industry, Science, Energy & Resources	www.energy.gov.au/
Department of the Environment, Water, Heritage and the Arts	www.environment.gov.au
Energy Efficiency Council	ww.eec.org.au/for-energy-users/overview#/overview
Energy Rating	www.energyrating.gov.au/
Green Building Council of Australia	www.gbca.org.au/
Information on saving water	www.savewater.com.au
NSW Government	www.energysaver.nsw.gov.au/business
QLD Government	www.business.qld.gov.au/running-business/energy-business/energy-saving/tips
SA Government	www.sa.gov.au/topics/energy-and-environment/using-saving-energy/for-businesses
Smart Energy Council	www.smartenergy.org.au/government-energy-saving-schemes
Sustainability Victoria	www.sustainability.vic.gov.au
WA Government	www.smallbusiness.wa.gov.au/blog/energy-efficient-tips-small-business

RS PRO Chrome Vanadium Steel Spanner Sets

- Manufactured from high-quality, chrome-vanadium steel
- Hardened and tempered

487280	12 Piece, Reversible Head
487179	9 Piece
6685859	3 Piece

RS PRO ESD Side Cutters

- RS PRO professional ESD safe Side Cutters constructed from high carbon steel for strength and durability
- Suitable for SMD and leads
- Facilitates optimum access
- Spring action – eases hand strain during repetitive use

|	
8640772	114 mm

RS PRO VDE/1000V Insulated Diagonal Cutters

- Material - constructed from high-grade steel with mirror polish and slip guard
- Two-component handle for ease of use
- VDE testez and confirms to IEC 900 1000V

497007	180 mm

RS PRO Polyurethane Coated Work Gloves

- Flexible and close fitting glove allowing for precise work requiring extra dexterity
- Elasticated knit wrist improves comfort and fit
- Suitable manual handling glove for mainly dry indoor and outdoor working environments

8691550	White, Size 10, Bag of 10
8691639	Black, Size 10, Bag of 10
8691660	Grey, Antistatic Size 9, Bag of 10

RS PRO Mechanical Tool Kits

- RS PRO Range of Mechanical tool kits, includes an essential and useful selection of screwdrivers, sockets, spanners and pliers
- The tools are of high-quality and the easy to carry case is versatile and durable with cut-out slots created for each individual component.
- Chrome Vanadium steel construction

7348889	94 Piece
8296559	88 Piece
8296568	78 Piece

RS PRO HSS Thread Tap & Die Sets

- High quality tap and die sets to DIN standard for general engineering use
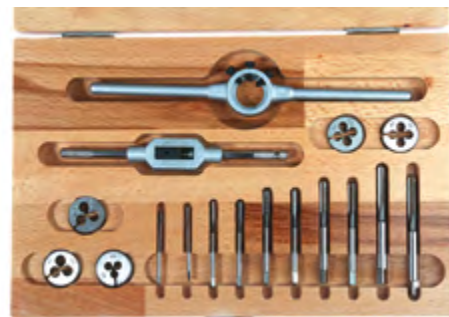
3009735	12 Piece, M2-M6
6681129	54 Piece, M3-M20
6681125	32 Piece, M3-M12

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