



MRO August 2020 Solutions



No time for downtime!

Whether you are processing food or packaging beverages, we're by your side keeping factories and production lines running.



MRO offers food for thought
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NEW
New Product Highlights
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Bulgin
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Cabling for the Food Industry
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How calibration improves optimization
Page 38



SAVE!
Priced to clear
Page 42



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.



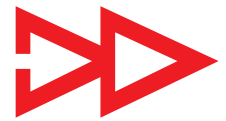
Competitive Quotes

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.



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
Email quotes: quotesandtenders@rs-components.com



Getting Back to Business

We're by your side to help you get your business back up and running safely.

Businesses have had clear guidance from the government on how to re-configure their workplaces to allow their workforce to continue or return to their jobs in safe, socially distanced manner.

From our perspective we have seen demand levels from across all sectors starting to increase as we moved through June into July. Of course, some sectors have stood out such as Food & Beverage manufacturing, where Australian grocery experienced unprecedented sales with March 18% higher than the Christmas month in 2019 – and similarly elevated consumption in April. However, many sectors are now starting to show signs of recovery in terms of increased demand for parts and consumable supplies that are so vital to keeping businesses running.

Throughout the crisis we have been proud to have supported thousands of businesses to operate in a new way, quickly adapted our own operation to allow this. So, we know the value of having the right products available, and how we must all transform our businesses to drive efficiency.

In this brochure we highlight products suitable for the food & beverage and associated industries, and a range of solutions to drive efficiency through e-Procurement, managed inventory and more.

Quality and safety is paramount, and the consistently high quality of Australian food production is supported by strict safety standards that are regulated and enforced along the supply chain.

From paddock to port, RS Components supplies the Food & Beverage Industry with innovative products from the leading suppliers backed by reliable world-class delivery.

Regards,

Cuong Vo

Vice President
RS Components ANZ



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Published by: RS Components Pty Ltd, 25 Pavese Street Smithfield NSW 2164

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MRO Offers Food for Thought



In the competitive world of food and beverage manufacturing, achieving cost efficiencies through better MRO spend could add significant value to a business's bottom line.

Food and beverage is a major industry sector for the Australian economy, in terms of both its financial contribution and employment.

Food and beverage processing is Australia's largest manufacturing industry. Industry players are diverse in size - from multinationals producing large volume fast-moving consumer goods through to smaller players with flexibility to meet demand for niche gourmet items.

The industry is highly dynamic driven by demanding consumers seeking diversity, quality and value whilst looking for better quality products and healthier or ethical alternatives, but still at a low price. This means there is a constant need to improve to stay competitive but still achieve a profit, which is why cutting costs is high on the agenda of food and beverage companies. This can result in companies pushing their manufacturing equipment harder to cope with growing demand.

The 2019 Indirect Procurement Report, carried out by RS Components and the Chartered Institute of Procurement and Supply (CIPS), found that the three biggest business pressures were reducing operational budgets (62%), reducing inventory costs (42%) and improving asset performance (39%).

However, focusing on the indirect procurement cost of industrial supplies for Maintenance, Repair and Operations (MRO) can help businesses achieve significant savings, if done correctly.

The type of MRO spend in the industry varies widely, from plant components to safety equipment and facilities products. The bottom line though, is that MRO represents a hefty annual spend for most organisations and there are often misunderstandings about the level of spending and the potential savings that can be achieved.

Consolidate suppliers

MRO is a complicated beast and is frequently overlooked as customers spend a disproportionate time on direct spend categories.

The MRO process is about businesses truly realising how inefficiencies can be pushed out in three main areas: working capital, procurement and downtime, all of which is driven by data.

Planning, organising, controlling and optimizing the 'indirect spend' process is valuable to all companies as it increases efficiencies and reduces significant 'hidden' cost of purchase of products, parts and services. As opposed to 'cost cutting' the focus should be in reducing the 'non-value' added costs while maintaining quality, delivery, reliability and high service to streamline MRO spend. The end-result is that the organisations continue to function, as needed without interruption, with increased efficiencies and reduces the actual cost of indirect expenditures. As New Zealand companies move out of lockdown and get back to business and adjust to the post-COVID way of operating, this will become even more imperative.

But how do you choose the right suppliers? The first step, according to Helen Alder, Head of Knowledge at the Chartered Institute of Procurement and Supply, is to draw up a list of key MRO products that are critical to your business operations.

“The procurement department needs to work with engineers and other end users to draw up this list,” explains Alder. “You then need to find a reliable set of approved suppliers you can trust to have the products you need in stock, at a price you are willing to pay and that can deliver when and where you need it.”

Knowing the industry

In an industry where there are strict regulations to protect consumers, it's also very important to work with suppliers that understand the challenges.

Food and beverage companies naturally must be extremely vigilant around contamination and traceability, whether it's the food products, or the lubricants and greases which help keep production runs operating. As the pressures on improving speed and efficiency increase, there are greater risks regarding health and safety so it's important for companies to work with distributors with a full, traceable supply chain.

Finally, but no less important, is the need to keep operations running as close to 100% as possible. Planned, and especially unplanned, maintenance must have as little effect on operations as possible, which means suppliers must have key parts in stock and be able to deliver them to site quickly.

When it comes to business-critical parts, cost may well be lower down the priority list. The importance of being able to get stock and have it delivered quickly makes it worth potentially paying a higher price for, because any delays in getting a critical part would cost the business much more in the long term.

RS understands the products that are needed day-to-day to keep warehouses running smoothly and safely.

We have invested in additional stock in our Sydney warehouse of our top selling products, ensuring we continue to be able to provide the products you need.

This article was originally published by Connected Thinking.

For more information and articles on Driving MRO procurement efficiency, MRO strategy, savings and efficiencies, visit our online portal:

connectedthinking.com



Take on the world New products for new opportunities.



PSENcode Coded safety switches

- Transponder technology for presence detection
- Pilz coding type: fully coded
- Dual-channel operation



PILZ
THE SPIRIT OF SAFETY

1919798	PSEN cs2.1n / PSEN cs2.1 1 Unit	540103
1919805	PSEN cs4.1p / PSEN cs4.1 1unit	541110

Magnetostrictive Sensors

- Exceptionally well-suited for use in hydraulic cylinders for position feedback, for molding and rolling mills, or for elevator and hoisting technology
- The sensors are installed in the pressure area of the hydraulic cylinder and have the same pressure resistance as the cylinder itself



BALLUFF		
1947630	20 Ma	BTL7-E501-M0300-P-S32
1947625	5 mA, 10 V	BTL7-A501-M0300-P-S32

Solenoid Valves

- Operating pressure range: -100kPa to 0.7MPa
- Response time ms (at 0.5MPa): 18 or less
- Coil rated voltage: 12, 24VDC



SMC

1964568	5 Port	SV1200-5FUD
1964556	3 Port	SYJ522-5LOU-M5-Q

Low Cost Non-Contact Thermometers

- Built-in laser targeting allows for better and more accurate targeting
- Temperature range of +32°C to +42.5°C with an accuracy of $\pm 0.3^{\circ}\text{C}$
- Optimum measurement distance 5 to 15 cm



RS PRO		
2010208	DT-8806H Forehead Thermometer	
2010210	DT-8806 Forehead Thermometer	

FATMAX® Socket Set

- Large, flush quick release button enables the easy removal of sockets
- Low profile switch lever prevents the accidental turning of the ratchet and allows for easy, one-handed operation
- Bi-material handle for comfort, grip and ultimate



STANLEY		
1931823	26 Pieces	FMMT82685-1

Energizer MAX Alkaline Batteries

- Energizer MAX Alkaline long lasting AA and AAA batteries, that can hold their power for up to 10 years while in storage.



Energizer		
1974301	AAA (Pack of 12)	AAA 8+4 MAX RS

E3AS-F Series Distance-settable Photoelectric Sensor

- Wide sensing distance of 50 to 1,500 mm, enabling use on any conveyor line width.
- TOF-type sensors for used with any type of conveyed workpiece.
- Compact-sized body can be mounted anywhere.



OMRON

1938353 NPN M8 4-pin E3AS-F1000IMN M3

Filter Fans with Fan Flaps

- New air-flap outlet technology for high airflow
- Easy mounting
- Protection type test/Environmental rating by independent testing institutes (VDE and UL)



STEGO

1947673	1031m³/h	01884.9-01
1947674	624m³/h	01874.0-31
1947675	665m³/h	01874.9-31
1950670	±2%RH (Pack of 5)	SHTC3
1950666	±0.1°C (Pack of 5)	STS35-DIS

Midi TwinLIGHT free-standing Beacons

- Operating temperature is from -30°C to +60°C
- Push-in terminal connection Type 12 UL Rating



WERMA

1974197	115-230Vac Red	26111060
1974214	115-230Vac Blue	26151060
1974274	115-230Vac Green	46121060
1974204	115-230Vac Yellow	26131060

Heat shrink tubing

- Flexible, standard wall polyolefin heat shrink tubing
- Excellent tensile strength and strain relief Provides excellent moisture protection



HellermannTyton

1946394 0.1673611111111111 301-10025

E-Stop Pushbuttons

- Robust mono-block
- Foolproof and fail-safe design
- Very low back panel depth
- Attractive, modern design



eao

1942038	1NC, illuminated LED	84-5321.2B20
1942039	1NC 1NO, non illumina	84-5330.0020
1942043	2NC, illuminated LED	84-5341.2B20
1942041	1NC 1NO, illuminated	84-5331.2B20

TE Connectivity High Temperature Wire

- Dual wall construction
- Small diameter
- Lightweight



TE
Authorized distributor

1135872	0.22 mm² CSA, White 100m Reel (Pack of 100)	M81044/12-24-9
1135782	1.3 mm² CSA, White 100m Reel (Pack of 100)	M22759/32-16-9

USB3F TV - Reduced Flange Connectors

- Derived from standard USB3F TV, Reduced Flange USB3F TV is ideal for applications where small dimensions and lower weight are critical
- With USB field, you can insert a standard USB 3.0 cordset into a metallic plug which will protect it from shocks, dust and fluids



Amph

1946528	USB3FTV7AGF312
1946529	USB3FTV7AZNF312
1946532	RJFTV67A1GF312
1946530	USB3FTV7ANF312

OsiSense XS Inductive proximity sensor

- Body Style Barrel
- Thread Size M30 x 1.5
- Output Type NC



Telemecanique
Sensors

1951876	1NC 24-240V 2m	XS630B4MBL2
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DT-156H Coating thickness tester

- Measured Coatings: Non-Magnetic
- Coatings (e.g. paint, Zinc) on steel; Insulating coatings (e.g. paint, anodizing coatings) on non-ferrous metals
- Operating with MENU easily Memory for 1500 readings

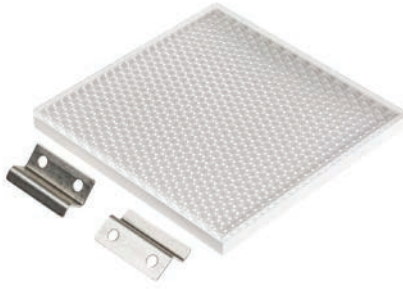


RS PRO

1924382	+40°C
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Telemecanique Sensors Reflector

- A range of square reflectors for use with the OsiSense XU series of Photoelectric sensors



2811739	Dim: 24 x 21mm	XUZC24
2811751	Dim: 50 x 50mm	XUZC50
3241585	Dim: 100 x 100mm	XUZC100

IP66 Snap Action Limit Switches

- Small footprint switches designed for demanding industrial applications
- Available in heavy duty metal or self-extinguishing plastic bodies
- SPDT snap action positive break switches with PG13.5 conduit openings



3081850	Top Roller Arm	GLCB01D
3081664	Adjusted Side Rotary Lever	GLCB01A2A

E5C2 On/Off Temperature Controller

- Front panel offset adjustments on PD controllers
- Fits standard 8-pin round sockets
Panel mounting hardware included



5350710	100→240 V ac Supply	E5C2-R20K AC100-240 0-400
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Barrel Inductive Proximity Sensor

- Twice nominal sensing distance
- Flush mount
- Fast switching frequency



4443271	M12, Sr 4mm, PNP, IP69K	XS612B1PAM12
4443293	M18, Sr 8mm, PNP, IP69K	XS618B1PAM12
4443287	M18, Sr 8mm, PNP, 2m	XS618B1PAL2
4443366	M30, Sr 15mm, IP69K	XS630B1MAL2

ETHERLINE® Cat.6A

- Industrial Ethernet cable Cat 6a for fixed installation
- Halogen free and UV resistant
- Ideal for automation applications, industrial machinery and plant engineering



8079587	Cat6 Cable Copper Braid PUR, 50m (Pack of 50)	2170465
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LM Cable Float Switch (Submerged)

- IP68 Sealed to withstand 10 bar
- Insensitive to Humidity and Condensation
- Adjustable Counterweight



4549082	No Protective Earth	LM10C
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SPDT PCB Mount Non-Latching Relay

- Ultra-slim, 5mm package
- 8/8mm clearance/creepage distance
- 6kV insulation, coil-contact



4572830	12Vdc	34.51.7012.0010
4572846	24Vdc	34.51.7024.0010
4572852	60Vdc	34.51.7060.0010

Handheld Proximity Switch Test Unit

- LED status indication Audio status indication
- Spring loaded terminals
- Fitted with two 9 V batteries ready to use



8399875	18 V dc 35 mA
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E3S-DB Transparent Object Sensor

- E3S-DB sensor provides most reliable detection of all kinds of transparent objects such as PET bottles, glass bottles or transparent trays
- Choice of Smart Teach enabling fast set up or trimmer sensitivity adjustment
- Narrow beam types detecting smallest gaps Proven for environments in the Food & Beverage industry



OMRON

8315971	0.7m, PNP, M12, Smart Teach	E3S-DBP22 OMS
8315969	4.5m, PNP, M12, Smart Teach	E3S-DBP21 OMS
8315975	0.7m, PNP, M12, Trimmer Adj.	E3S-DBP22T OMS
8315978	4.5m, PNP, M12, Trimmer Adj.	E3S-DBP21T OMS

IFM Distance Photoelectric Sensors

- Detection range: 0.03 to 2m
- Background suppression
- M12 connector



8140361	Barrel, Laser Light	O1D200
8140370	Block, Laser Light	O5D100

Guided Radar Level Probes

- Guided radar level probes using TDR radar technology and a cuttable level probe to achieve precise level detection which is immune to deposit formation
- Analog outputs include 4 mA-20 mA / 0-10V, & more, plus digital outputs
- Suitable for process temperatures up to 100°C with IP67 / IP69K protection



SICK

7943389	500mm probe	LFP0500-A4-NMB
7943383	1000mm probe	LFP1000-A4-NMB

W2S-2 Series Photoelectric Sensors

- W2S-2 miniature photoelectric with PinPoint LED for rugged and reliable detection of all object types
- Choice of diffused background suppression, retro-reflective or through-beam - with sensing ranges up to 2m
- All sensors have PNP output and 10-30Vdc supply, retro-reflective sensors can use a range of reflectors - see 265-2754



SICK

8428572	WTB2S-2P1330
8428560	WTB2S-2P3130
8428585	WTB2S-2P1360
8428579	WTB2S-2P3160

Dual Output Isolating Signal Converter

- 24Vdc supply
- Converts single current input to 2 independently isolated current outputs
- Fully isolated - Input/Supply/Output



4662264	Input Range: 4-20mA
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UNIK 5000 Series Fluid Pressure Sensors

- Industrial use pressure transmitters with accuracy to $\pm 0.04\%$ Full Scale and Stainless Steel bodies
- G $\frac{1}{4}$ female process connection
- DIN 43650 Form A output connector (Mating connector supplied)



Druck

7463470	10 bar gauge, 4-20mA output	X5072-TB-A1-CA-H1-PA 10.0 bar G
7463477	16 bar gauge, 4-20mA output	X5072-TB-A1-CA-H1-PA 16.0 bar G
7463499	250 bar gauge, 4-20mA output	X5072-TB-A1-CA-H1-PA 250 bar SG
7463449	250 mbar gauge, 4-20mA output	X5072-TB-A1-CA-H1-PA 250, mbar G

M18 Inductive Sensors

- IP67 protected, and flush mounting
- 10-30Vdc supply, with NO outputs
- Sensing range quoted with mild steel - M12 and M30 options available from stock



7018222	NPN, Sn range 5mm, 2m
7018235	NPN, Sn range 5mm, M12
7018213	PNP, Sn range 5mm, 2m
7018244	PNP, Sn range 5mm, M12

S18 series photoelectric sensors

- EZ-BEAM technology for reliable sensing without the need for adjustments
- Innovative dual-indicator system for simple sensor performance monitoring
- 18 mm threaded barrel



7643887	0 100 mm	S18SP6DQ
7643884	0 100 mm	S18SP6FF100Q

IDEM Guardian Line GLS-SS Stainless Steel Safety Rope Pull Switches

- Switch mechanism will latch the instant the safety contacts open, ISO13850 standard
- Up to 80m (260 feet) can be covered using only a single switch and safety spring
- Up to 100m (328 feet) can be covered using two switches



8264117 E-Stop, 2NO/2NC, IP69

144015

Red Flashing Beacons

- Suitable for continuous or flashing operation (where applicable)
- Uses 8 high-reliability ultra-bright LEDs
- Zero power consumption when connected in reverse polarity - useful for fire alarm applications



klaxon

3095764	Xenon Beacon, 12/24Vdc	QBS-0052
3095865	Standard Xenon Beacon, 230Vac	QBS-0017

Illuminated Pushbutton Heads

- All heads require a fixing collar/ integral LED/ contact assembly
- If using LED blocks, the colour of the head should be matched with the LED
- Can be used with XAL control stations



7468466	White, IP66	ZB4BW513
7468719	Green, IP66	ZB5AW533
7468728	Red, IP66	ZB5AW543
7468475	Blue, IP66	ZB4BW563

Surface Mount Emergency Stop Pushbuttons

- Polycarbonate enclosure with an ingress protection of IP65
- Red, 40mm diameter pushbutton head
- Body dimensions: 68 x 68 x 51mm



6094708	1NO/1NC Turn Release	XALK178E
6094714	1NO/2NC Turn Release	XALK178G

AW Series Toggle Switches

- Toggle switches with silver plated contacts sealed to prevent the ingress of dust or liquids
- Connection via 250in. (1/4in.) receptacles or soldering
- For biased operation 'on' refers to momentary on position



2662206	4PST	A4TK15W04
2662212	4PDT	A4TN15W04
2662234	4PDT	A4TP15W04

Complete Contact Blocks

- Screw clamp terminal connections
- Includes fixing collar
- Operating temperature range -25 to +70°C



3310158	IP20 1NO Contact Body	ZB4BZ101
3422784	IP20 2 NC Contact Body	ZB4BZ104
3310186	IP20 2NO Contact Body	ZB4BZ103

SONFL1 Sounder Beacons

- 2-stage alarm
- Automatically synchronising
- Reverse polarity diode protection



6173558	10-tone Red Sounder, Red Beacon	SONFL1XDC024R/R-H
6173609	10-tone White Sounder, Amber Beacon	SONFL1XDC024W/A-H

Stainless Steel Enclosed E-Stops

- IP69K stainless steel 316 can be high pressure hosed with detergents at high temperature
- 3 pole contact blocks provide positively operated switch contacts
- Conformance to ISO13850, EN60947-5-1 and EN60947-5-5



8264390	2NC/NO	231001
8264394	½ NPT, 2NC 1NO	231002
8264404	M20, 2NC 1NO	231005

AZ Series Standard Safety Interlock Switches

- Individual coding available on request
- Long life
- Double insulated



SCHMERSAL		
6233054	2NC/1NO	AZ16-12ZVRK-M20
6232988	1NC/1NO	AZ16ZVRK-M20

SuperM Siren

- High output siren sound (127 dB)
- Separate mounting bracket for easy installation
- Weatherproof for use both indoors and outdoors



klaxon

9076343	230 V ac, 127dB at 1 Metre	SLD-0002
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PSR Safety Relays with Time Delay

- Single and two-channel control
- Manually monitored and automatic activation
- 3 undelayed and 2 drop-out contacts



PHENIX CONTACT		
6667053	6 contacts	2981428
6667069	2 contacts	2981499
7125263	3 contacts	2986575

Magnetic Non-contact Safety Switches

- Supply voltage rating is 100VAC/DC
- Long life and no mechanical wear
- Insensitive to lateral misalignment



SCHMERSAL		
6175150	100 V ac/dc	BNS 33S-12Z
6175352	Actuator, For Use With BNS 33S Safety Switch	BPS 33S

Grey 32 Tone Electronic Sounder

- Automatic synchronisation on multi-sounder system
- Continuously rated
- Stainless steel fixings



e2S		
2378872	10 - 30 V dc, 126dB at 1 Metre	MA121DC24G

Stainless Steel Lockout Hasp

- Made from steel
- Corrosion resistant
- Up to 6 padlock usage



RS PRO	
8625155	6 Lock, 5mm Shackle

Rope Pull Kit - For Use With All Rope Pull Switches

- Supplied with all fittings and fixtures required to install any rope pull switch, including hazardous area versions
- Stainless steel grade 316 and the cable is multi-strand galvanised steel covered with PVC



RS PRO	
2396763	10m

ÖLFLEX® ROBUST 210

- ECOLAB® certified harsh environment control cable
- Outstanding UV, ozone, organic oil & chemical resistance
- 300-500V rated with number coded cores



LAPP GROUP

8003271	3 core+earth 1mm (Pack of 50)	21916
8003287	2 core+earth 1.5mm (Pack of 50)	21929
8003265	6 core+earth 0.75mm (Pack of 50)	21904
8003303	4 core+earth 2.5mm (Pack of 50)	21951

Ölflex® Classic 115 CY

- Tough and flexible and resistant to most oils and chemicals
- Fine wire strands of copper
- Core insulation in PVC,



LAPP GROUP

4440525	3 core (Pack of 50)	1136203
4440553	4 core (Pack of 50)	1136104
4440604	5 core (Pack of 50)	1136305

MCT Series Metal Content Blue Cable Ties

- Magnetic detectable
- Nylon tie incorporating a metallic compound dispersed throughout the entire body of the tie
- Coloured to assist in detection



HellermannTyton

3962175	390 x 4.6mm (Pack of 100)	111-00831 MCT50L-PA66MP-BU (100)
6961995	380 x 7.6mm (Pack of 100)	111-01136 MCT120R-PA66MP-BU (100)
6961998	250 x 4.6mm, Release (Pack of 100)	111-00937 MCTRELK2M-PA66MP-BU (100)
480475	200 x 4.6mm (Pack of 100)	111-00830 MCT50R-PA66MP-BU (100)

HTAT Semiflex Dual Wall Heat Shrinkable Tubing

- Environmental sealing, high-strength bonding
- Operating temp -55°C to 110°C
- Installation temp. 125°C



TE
AUTHORIZED DISTRIBUTOR

3440669	32-8mm i/d	HTAT-32/8-0-STK
3440653	24-6mm i/d	HTAT-24/6-0-STK
3440603	4-1mm i/d	HTAT-4/1-0-STK
3440675	48-13mm i/d	HTAT-48/13-0-STK

Liquid Tight Conduit Fittings

- Nickel Plated Brass Liquid Tight Straight Swivel Fitting with External Thread

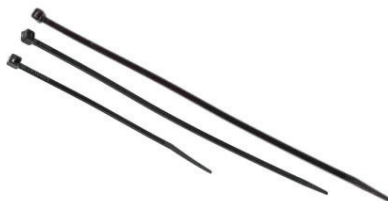


Adaptaflex
Flexible Conduit Systems

123793	20mm (Pack of 10)	SPL20/M20/M X 10
123787	16mm (Pack of 10)	SPL16/M16/M X 10

Cable Tie Bundles

- A range of RS PRO cable tie kits, offers a selection of easy to use, non-releasable cable ties for quick installation and ultra-secure fastening, even by hand

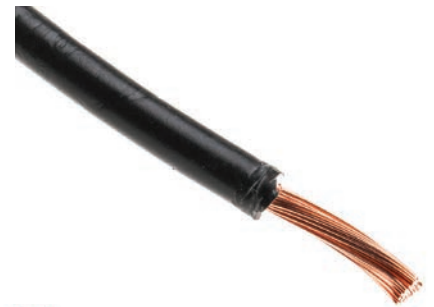


RS PRO

2013048	Natural
2013590	Black
2013591	Mixed

Black Tri-rated Cable

- A plain copper conductor
- Can operate in temperatures up to 90°C for continuous use or 105°C for a limited period of time
- A voltage rating of 600 / 1000 V



RS PRO

8111442 4 mm² CSA, 1 kV, 41 A, 100m (Pack of 100)

Lockout Starter Kit

- An essential addition to any workplace, this starter kit is from our high-quality own brand RS PRO, offering machine, electric and worker protection
- Basic lockout for valves and electrical panels



RS PRO

8625247 24 products

RNF-100 Mixed Heatshrink Kit

- High quality heat shrink tubing
- 450 pieces, supplied in a wide range of diameters in 7 colours and various lengths
- Shrink ratio of 2:1



TE
AUTHORIZED DISTRIBUTOR

1132596 Heatshrink Kit

RNF 100 KIT

Universal NI Stainless Steel IP66 Wall Box

- IP66 protection rating
- Flexible equipment mounting options
- Specially designed gutter system



8852809	200mm x 500 mm x 400 mm	NI05042/S
8852764	150mm x 300 mm x 200 mm	NI03021/S

Stainless Steel Locks

- Manufactured from stainless steel to withstand the harshest environments
- Supplied fully assembled ready for installation
- Particularly suitable for use in the food industry



3410270	7mm, Square, 32mm Grip Length	6801005
3410129	8mm, Triangular, 13mm Grip Length	6801830
3410135	8mm, Triangular, 20mm Grip Length	6801816
3410157	8mm, Triangular, 26mm Grip Length	6801834

IP66 Wall Boxes

- Pull out hinge pins allow door to be completely removed for access
- Stainless steel door lock and bezel prevent contaminant build-up
- Double lip edge to ensure higher strength and ease of installation for the panel builder



7491829	200 x 200 x 150mm
7491822	250 x 300 x 150mm
7491838	300 x 300 x 150mm
7491832	400 x 400 x 150mm

AE Compact Enclosures

- Protection category: IP66 to IEC 60 529, NEMA 4X and IK08
- Stainless steel 1.4301 (AISI 304) enclosure and door
- Door opening angle approx. 130°



7846178	1000 x 800 x 300mm	1016600
7846128	300 x 200 x 120mm	1001600
7846121	300 x 200 x 155mm	1002600
7846125	300 x 300 x 210mm	1003600

IP66 Hygienic Enclosure

- High quality 240 grain surface finish
- Material 304 stainless steel, thickness 1.25mm
- No gap between cover and lower sections



4729468	150 x 150 x 81mm	37151508
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Nickel Plated Stainless Steel M16 Index Plunger

- Hardened plunger
- For applications where precision positioning is needed, such as rotary indexing heads



237407	M16 Index Plunger, 75.5mm Long (Pack of 5)
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Stainless Steel Adjustable Pull Latches

- Suitable for a wide variety of uses where corrosion resistance is necessary i.e. food containers
- Available in three sizes
- Supplied with Latch hook and catch



3399202	125 x 40 x 22mm (Pack of 2)
3399218	75 x 26.5 x 16.5mm (Pack of 2)

ARCA Polycarbonate Wall Box

- Door opens 120° for easy access to the contents and has pre-formed fixing studs inside
- Declined design on base for improved weatherproofing
- Patent pending hinge design for easy assembly and refined appearance



7982003	150mm x 400 mm x 300 mm	ARCA 403015 cabinet
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Steel Short Clevis

- DIN 71752
- Clevis - Steel to BS970 PE 1 1983 220 MO7
- Spring Clip - Steel to BS970 PE 5 1972 270 A72
- Zinc plated



3120258	M5 x 0.8
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4000 Series Cable Connectors

- Mates with flex cable and panel mount versions
- In-Line cable connection
- Contacts supplied separately



9124868	3 Pole Male	PXP4010/03P/5560
9124950	3 Pole Female	PXP4011/03S/5560
9124931	12 Pole Female	PXP4010/12S/6065
9125072	12 Pole Female, Rear	PXP4013/12S

Stainless Steel Pushbuttons

- Prominent, domed and low profile versions
- IP66 & 68 front panel sealing options
- Vandal resistant stainless steel switch body and button



7082936	28mm, Flush, SPCO	MP0027
7082942	22mm, Flush, SPCO	MP0031
7082955	22mm, Domed, SPNO	MP0037/3
7082958	22mm, Flush, SPNO	MP0037

900 Series IP68 Rated Dust Caps

- Water and dustproof
- Leading earth pin
- Scoop proof contacts



3444302	Sealing cap for use with X0911/xx/x and PXA911/xx/x	PX0960
3444318	Sealing cap for use with all other styles	PX0970

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



4686232	Panel Mounted Coupler	PX0833
4686226	Cable Connector	PX0834/B

Bulgin Miniature Push Button Switches

- Momentary action switches with slow make-and-break contacts.
- Single hole fixing to clear 7.4mm.
- Solder terminals



320629	SPNO	T0916SOAAE
320641	SPNC	T0918SOAAE

Buccaneer Series 2-poles Circular Flex Cable Connectors

- Screw termination
- Straight body orientation
- Easy assembly, no special tools required



483893	Male	PX0736/P
489532	Female	PX0736/S

DPST Rocker Switches

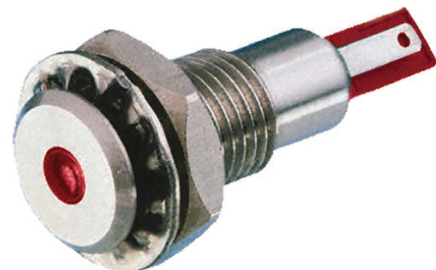
- Red & green illuminated options
- Silver alloy contacts
- Panel cutout 30 x 22.1mm



129426	Red Rockerswitch, 16A	C1353ALGNB
129432	Green Rockerswitch, 16A	C1353ALGNC
2877335	Red Euro Rockerswitch, 16(4)A	C1353ALNAE
2877341	Green Euro Rockerswitch	C1353ALNAF

LED Indicator, 12.1mm Mount

- 5mm V-0 rated high contrast, frosted effect polycarbonate lens
- IP67 sealed
- 15mm low profile bezel, marine grade stainless steel housing



3769156	Red LED, 24Vdc	DX0505/RD/24
3769178	Yellow LED, 24Vdc	DX0505/YL/24

Vandal Resistant Switches

- High corrosion resistance
- Domed, low & prominent profiles
- IP66 & IP68 sealing versions
- Illuminated & non-illuminated
- Front & rear panel mount versions



7083009 Switch,PB,vandal res,dot red/green,IP66 MPI001/TERM/D1

7083093 Switch,PB,vandal res,32mm,flush,SPOCO MP0050

6000 Series Circular Power Connectors

- 2 - 22 Contacts
- Plastic or Metal Housing
- IP66, IP67, IP68 & IP69K protection
- Secure, quick mating / release
- cULus, UL, VDE Approvals



7659652 Flex connector,2 way pin contacts PXP6010/02P/ST/0507

7659757 Chassis connector,2w,socket contacts PXP6012/02S/ST

7659775 Chassis connector,16w,pin contacts PXP6012/16P/CR

LED Screw In Panel Mount Indicator Bulb Holders

- LED lampholders
- 5 mm Lamp Size, 8mm Panel Hole Diameter
- Black or Chrome finish



2370547 Chrome

A105000AAB

2370553 Black

A105000AAD

Indicators

- LED, Neon & Filament options
- Panel sealed IP66 & IP67 versions
- Wide choice of bezel sizes & styles
- Multiple termination types
- Rugged stainless steel variants



585438 6.1mm red LED DX1116/RD

585444 6.1mm green LED DX1116/GN

900 Series Circular Power Connectors

- 32A, 600V ac/dc max rating
- 2, 3, 4, 5, 7 & 10 contacts
- IP66, IP67, IP68 & IP69K protection
- Single or 3 phase applications
- CCC, UL, CSA & VDE approvals



3443999 3 way PX0911/03/P

8418932 10 way PX0911/10/P

3444021 5 way PX0911/05/P

Buccaneer 900 Series Female Panel Mount Connectors

- Water and dustproof
- Leading earth pin
- Scoop proof contacts



3444223 4 contacts PX0931/04/S

3444245 5 contacts PX0931/05/S

Photoelectric Sensors

- Sealed to IP67
- Stainless Steel 316 shell
- Detection distance 1 - 40mm
- Light point diameter 5.0mm at 30mm
- Ambient humidity 35 - 85%



1874... ...

1874866 Dark on, NPN, Cable SLDP3002CL

1874861 Light on, NPN, M5 SLLP3002M5

Buccaneer Standard Sealed Power Connectors

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



2755342 Screw terminal plug PX0745/P

2755364 Screw terminal socket PX0745/S

2755392 Inline coupler plug PX0746/P

2755409 Inline coupler socket PX0746/S

LED Panel Mount Indicators

- 14mm coloured diffused polycarbonate
- Prominent or low profile style lens
- White nylon 6.6 body
- Chrome bezel



589698 C027500NBB

589705 C027500NBC

589711 C027500NBD

Are photoelectric sensors suitable for harsh environment use?

With the latest advances in industrial automation, sensors and actuators have become an essential element in just about every manufacturing assembly line.

Wherever the distance, absence or presence of an object needs to be measured, a photoelectric sensor is used. There are three main types of photoelectric sensors: through-beam, reflective, and diffused. Each sensor has its own advantages and can be used in a variety of ways.

The photoelectric sensor senses the position of objects using a modulated light beam emanating from a light transmitter. The absence or presence of the target is dependent on the reflection of the light beam which is captured using a photoelectric receiver. A photoelectric sensor makes use of modulated light, usually from an LED source, which is pulsed at a specific frequency anywhere between 5 and 30 kHz. This reduces the chances of ambient light or reflective glare affecting the sensor's performance.

Installation of photoelectric sensors

However, not all assembly lines are plain sailing for the installation of photoelectric sensors. Some manufacturing environments such as food production lines may be clean, dry and dust-free due to the levels of hygiene required. But some environments, particularly industrial ones, can be filled with hazards such as extreme heat or cold, shocks, radiation, chemical spray or sparks, and contaminants like dust particles, smoke, moisture, and dirt. Examples of these demanding types of industrial environments could include automotive manufacturing, wood processing or mechanical engineering.

In addition to the risk that sensors might register false positives in such environments and cause assembly line breakdowns, quality control failures or even assembly line accidents, there are also risks posed to the longevity of the sensors themselves, necessitating replacement if they are no longer functional. All of these risks pose serious implications for the manufacturer, so it is of vital importance to ensure that the right type of sensor is installed for the application in question.



The system designer must ask the following questions prior to the purchase and installation of photoelectric sensors on the assembly line:

- What is the distance rating and sensitivity of the sensor?
- What are the ambient temperatures the sensor will usually be exposed to?
- What hazards will the sensor be exposed to?
- What contaminants will the sensor be exposed to?
- In case of breakdown on the production line, would the sensor be exposed to more extreme temperatures or any other increased hazards for longer than usual?

The next step would be to determine what preventative measures can be taken to ensure that the sensors are not exposed to damage due to hazards or contaminants:

- Use sensors with an appropriate IP rating to ensure the protection of the device against water, dirt, and heat
- Install the sensors at a higher distance above the assembly line target mark
- Clean the sensors regularly to avoid a build-up of dirt, dust and oily residue
- Cool the sensors using air or water cooling options if possible

Bulgin solutions

Bulgin's cost-effective and flexible slimline photoelectric sensor range offers a high degree of mechanical and electrical stability. The solution has been designed specifically with manufacturing automation and industrial automation sensing operations in mind. The Bulgin photoelectric sensor is a combination of reflective and diffusion beam, meaning only one sensor is required for the system as opposed to using multiple types of sensors within the assembly line. With their simple, secure and efficient design, these sensors offer a watertight and dustproof seal to any standard M5 interface. The sensors are made with highly robust stainless steel 316 casing material and can withstand a high degree of physical impact, including superior vibration and shock and bump resistance.

To view our comprehensive range of Bulgin Sensors visit RS Online today.

EPIC® LS1 Series

- Circular connectors for servo motors & power supply
- High power at smallest installation space
- EMC-optimised design



LAPP GROUP

7276235	Angled 6 pin	24420058
219138	Front mounted 6 pin	76003000
7276232	Angled 8 pin	24420056
219059	Front mounted 8 pin	76004000

ARISO Series Contactless Transmitters

- Reverse polarity protection for power and data transmission
- Protection against over heating
- Will automatically switch off in the event of a metal foreign object between transmitter and receiver



9060925	12W contactless power transmitter data receiver cable with 8PNP and A-Standard Coding	2287598-3
1680681		2287598-4
9060929	12W contactless power receiver / data transmitter cable with 8PNP and A-Standard coding	2287598-4

USB TV Series Type A USB Connector

- Sealed against fluids and dust
- Shock, vibration and traction resistant
- No cabling operation in field (no tools required)



Amphenol SOCAPEX

5369332	Straight	USB TV 6 N
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EPIC® SIGNAL M23 Series

- Circular connectors for servo motors & encoders
- Robust metal connector with integrated EMC cable gland
- Inserts included



LAPP GROUP

218949	D6 connector 17 contacts	44420037 + 73028500
219144	F6 coupler 12 contacts	44420040 + 73002720
218983	F6 coupler 9 contacts	44420040 + 73002744
219453	D6 connector 9 contacts	44420040 + 73002756

Weidmuller Cat6a RJ45 Coupler

- The best choice when you need an IP65 connection at the control panel, electrical cabinet or distribution board
- Operating at a LAN Category of 6 a, these interface sockets are protected by a PA; UL 94: V-0 rated housing with a protective cap, and are ideal for industrial environments



Weidmüller

7417326	2 Port, STP	IE-FCM-RJ45-C-1018790000
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EPIC® H-B Series Kits

- Flexible & robust 16A industrial connectors
- IP65 rated
- Numerous additional connector kit options available online



LAPP GROUP

3961532	2+ way	10102000+10196000+10197000+191
3961475	6 way	19011000 + 10003000 + 10191000
3961526	16 way	10072000+10194000+10195000+190
486735	10 way	10046000+10193000+12954400

Eco-Mate 3+PE Cable Connectors

- Quick and easy assembly
- Keyed orientation
- Robust and ergonomic design



Amphenol

5401896	Blue	C01620D00310010
5401903	Black	C01620D00311010

HE Series size 6 Connector Hoods & Accessories

- Hoods are made from aluminium alloy casting and available in top, angled or side entry
- Hoods provide IP65 sealing when fitted, PG variants are supplied complete with cable sealing glands
- Bases made from aluminium alloy casting and in top entry only, supplied with panel sealing gaskets



3003800	Side entry cable hood	1-1102289-6
3004033	Surface mount base	1-1102298-1

Universal Crimp Tool for Deutsch Connectors

- Adjusting screw includes jam nut
- Compatible with a wide range of Deutsch connector crimps
- Lightweight and comfortable to use



425973	16AWG	HDT-48-00
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SACC-M12FS SPEEDCON Series of Connectors

- A high degree of protection, rated at IP 67
- Operates at an ambient temperature between -40°C to +85 °C, ideal for industrial environments



8016466 Male	1511857
8016460 Female	1511860

Rogowski Coil Current Sensors

- Kit consisting of 2 components: 1 A measuring transducer and a Rogowski coil
- High system availability due to easy installation without removing system parts
- Transform alternating currents up to 4000 A using a single measuring system



8200431 300 mm, 95 mm	2904921
8200435 450 mm, 140 mm	2904922
8200444 600 mm, 190 mm	2904923

Industrial Ethernet Switches

- Ethernet switch, various RJ45 port configurations available
- SC & ST
- Connections also supported on selected options
- AC or DC supply voltages
- Automatic detection of data



6485845 4 port, 32V dc	2891851
6485867 5 port, 32V dc	2891152
6485873 8 port, 32V dc	2891929
8017416 4 port, 48V dc	2891028

CONTACTRON '3 in 1' Hybrid Motor Starters

- Forward running
- Motor protection
- Emergency stop
- 75% less space required
- 75% less wiring time



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

Isolated DC-DC Converters

- Power Boost allows reliable starting of difficult loads
- Preventive function monitoring indicates critical operating errors before they occur
- Output voltage regenerated even at the end of long cables



7397913 18 - 32 V dc, 12V dc	2320115
7397904	2320092
7397900 18 - 32 V dc, 24V dc	2320034
7397916	2320128

SACC M12 SPEEDCON Connector

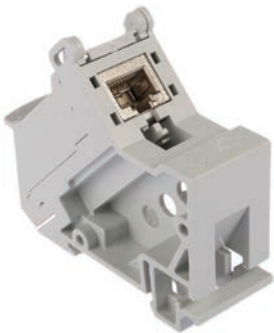
- A high degree of protection, rated at IP 65 & IP 67. Operates at an ambient temperature between -5°C to +50 °C, ideal for industrial environments



8016545 M12 Male, 8 contacts	1417430
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CUC Series RJ45 DIN Rail Adapters

- IP20 protection class
- Robust plastic housing
- Cat6a and Cat6 performance



1302307 Cat6 RJ45 2 Port	1418094
1302311 Cat6a RJ45 1 Port	1419024

ATEX Configurable Isolator

- 36 input/output combinations available
- Input and output, 0-20mA, 4-20mA, 0-10V, 2-10V, 0-5V, 1-5V
- Configured using dip switches



4892904 24 V dc, ATEX	2864150
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M12 to Ethernet Network Cable Assemblies

- Rated at 1A 50V
- Operating temperature range -20 to +80 °C
- IP67 rating for M12
- IP20 rating for RJ45



8033174 M12 to Straight RJ45	1408733
8033222 Straight RJ45 to Straight RJ45	1408749

M12 Male Cable Mount Housing

- Cat6a 10Gb/s data transfer.
- Swift installation thanks to the SPEEDCON fast locking system



8937749 8 contacts Plug

1411043

M12 Sensor/ actuator cables with free conductor end

- Sensor/ actuator cable (SAC)
- With straight M12 plug and free conductor end
- Completely assembled



7211115 5-position, 1,5m 1669767

7211119 5-position, 3m 1669770

7211128 5-position, 5m 1669783

7211061 4-position, 1,5m 1668043

PSR Safety Relay with Time Delay

- Slim overall width means you can save space
- Fast installation and startup
- Force guided contacts make them a reliable choice



6667056 2 Safety Contacts 2981800

6667022 3 Safety Contacts 2981020

PROFINET CAT5 Push-in connectors

- Safe use in the field, thanks to a high degree of protection
- Flexible: connectors for on-site assembly
- Save time, thanks to installation with SPEEDCON fast locking system



1548140 Right Angle, Male 1424684

1548139 Straight, Female 1424683

1548138 Straight, Male 1424682

QUINT POWER - Ex Power Supplies

- Universal power supply with extensive product range, including special variants and accessories
- Starting heavy loads with high inrush currents reliably using POWER BOOST power reserve
- Can be used worldwide in all industrial sectors



5055500 40A, 960W 2938646

5055358 10A, 240W 2938617

5055465 10A, 240W 2938604

5055471 5A, 120W 2938581

TRIO Range Power Supplies

- Robust design
- Available in single and three phase
- IP20 protection



1234307 20A 2904602

1234308 5A 2904620

MACX MCR voltage measuring transducer

- Adjustable voltage ranges
- Bidirectional output signals
- 3-way isolation



1717042 -550 → +550 V dc Input 2906242

QUINT DC to DC Converters

- Power Boost allows reliable starting of difficult loads
- Preventive function monitoring indicates critical operating errors before they occur



7617633 9 - 18 V dc 2320131

7617636 30 - 60 V dc 2320144

QUINT Switch Mode DIN Rail Panel Mount Power Supplies

- Selective Fusebreaking Technology (CRC Technology)
- Worldwide use through wide-range input for DC and AC networks
- Reliable start difficult loads with static power reserve POWER BOOST



6657835 12V dc, 15A 2866718

6657832 12V dc, 20A 2866721

540769 24V dc, 10A 2866763

540779 24V dc, 20A 2866776



Cabling For The Food Industry

Hygiene safety is top priority in the food industry.

You need reliable cabling in environments with demanding hygiene requirements, that must withstand aggressive cleaning agents and processes.

That's why you should on the Phoenix Contact range for cabling – it is resistant to corrosion and features a unique design.



Phoenix Contact Advantages

- **Consistent product range**
designed to meet the requirements of the pharmaceutical and food industry
- **Easy to clean**
thanks to the special hygienic design
- **Corrosion protection for all exposed metal parts**
stainless steel type 1.4404
- **Quickly detect contamination**
with the bright colour

Hygienic Design – A Clean Concept

The food industry places the highest demands on components and materials with respect to the degree of protection, corrosion resistance, and hygiene. Phoenix Contact offers a complete solution for applications in this sector. The special hygienic design makes the connectors particularly easy to clean. The use of stainless steel ensures comprehensive protection against corrosion and contamination can be quickly detected thanks to the light-colored molding. The demands placed on connectors vary depending on the area of application – Phoenix Contact offers the ideal solution for every application.



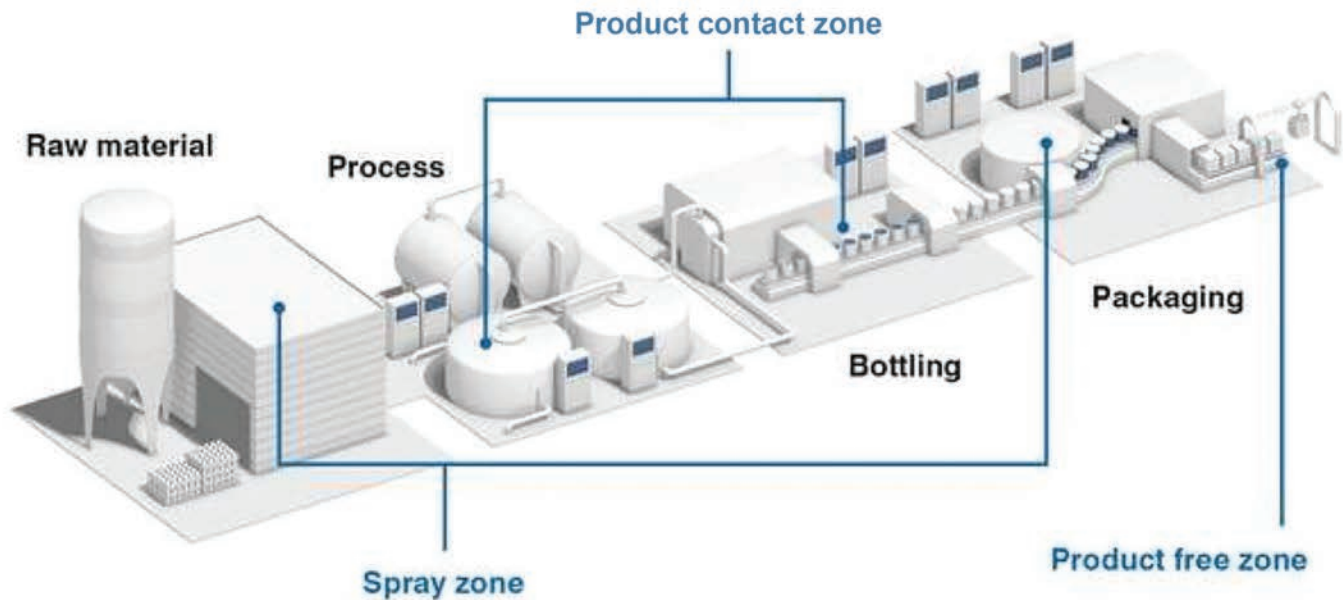
Resistance of Metals and Plastics

Play it safe. Only use reliable materials. The metals and plastics used by Phoenix Contact have been tested with the following common cleaning agents and disinfectants:

- P3-topactive DES
- P3-topax 19
- P3-topax 56
- P3-topax 66
- P3-topax 91

Zones in the food processing industry

Food and its packaging may not become contaminated through contact with system and machine parts. In production, there are three zones: the product contact zone, the splash zone, and the product-free zone. Each zone imposes specific requirements on the sensors and actuators and on the respective cables and connectors.



Product Contact Zone



Food may come into contact with system parts here and then be returned to the processing sequence. The hygiene requirements are therefore particularly high in this zone. Connectors and other components may not contain any dirt pockets.

The hygienic design has been developed and implemented specifically for use in this zone following the EHEDG guidelines with M12 design.

Spray Zone



In the splash zone, components can come into contact with food. In contrast to the product contact zone, the food is not returned to the processing sequence after contact with the components.

Phoenix Contact connectors with washdown design were specifically developed for the splash zone. Smooth contours on the grip minimize the adhesion of food particles on the connector.

Product-free Zone



In this zone, the products are generally already packaged and no longer exposed to direct contact with system components. In this case, the requirements are comparable with those in classic industrial environments.

Cleaning the packaging systems does not require any aggressive cleaning agents and does not generally involve high-pressure equipment. Our standard range for sensor/actuator cabling is suitable for use in this zone.

Pneumatic Manual Control Valves

- G ¼, Aluminium ¼ in G, -10 → +60°C
- Rotary slide valve design
- Available with G ¼ or G ½ ports
- Can be fitted to MS4 and MS6 Series Modular units
- Non-reversible flow direction



FESTO

1215648 Pneumatic	MS4-EM1-1/4
1215649 Rotary Pneumatic	MS4-EM1-1/4-S

VUVG Metric M5 5/2 Solenoid/Spring Inline Pneumatic Solenoid Valve

- Compact design, saving space and time
- Pressure range -0.9 bar to 10 bar for maximised energy density and more power
- High flow rates and short cycle times
- Long service life, reducing downtime
- Protection: IP 40/IP 65



FESTO

1215879 Metric M5 5/2	VUVG-LK10-M52-AT-M5-1H2L-S
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Silver 50m Polyurethane Air Hoses

- Highly flexible plastic tubing
- Fits a variant of fittings
- Compressed air in accordance with ISO 8573-1:2010
- Ambient temperature: -35°C to + 60°C
- Operating pressure: -0.95 to +10 bar



FESTO

1216291 Inside Dia. 2.6mm (Pack of 50)	PUN-H-4X0,75-SI
1216293 Inside Dia. 4mm (Pack of 50)	PUN-H-6X1-SI
1228470 Inside Dia. 5.7mm, Suitable for Food Use (Pack of 50)	PUN-H-8X1,25-SI
1228459 Inside Dia. 7mm, Suitable for Food Use (Pack of 50)	PUN-H-10X1,5-SI

Filter Regulators

- Constant output pressure with return flow
- Choice of fully automatic or manual drain
- Plastic or fully integrated metal bowl guard
- Can be fitted with analogue pressure gauge or sensor with LCD display
- Rotary knob with detent can be locked to prevent setting changes



FESTO

1215654 1 ¼ Bar	MS4-LFR-1/4-D7-ERM-AS
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VUVG G 1/8 5/2 Solenoid/Spring Inline Pneumatic Solenoid Valve

- Compact design, saving space and time
- Pressure range -0.9 bar to 10 bar for maximised energy density and more power
- High flow rates and short cycle times
- Long service life, reducing downtime
- Protection: IP 40/IP 65



FESTO

1215890 G 1/8 5/2	VUVG-LK14-M52-AT-G18-1R8L-S
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Black 50m Polyurethane Air Hoses

- Highly flexible plastic tubing
- Fits a variant of fittings
- Compressed air in accordance with ISO 8573-1:2010
- Ambient temperature: -35°C to + 60°C
- Operating pressure: -0.95 to +10 bar



FESTO

1216392 Inside Dia. 2.6mm (Pack of 50)	PUN-H-4X0,75-SW
1216294 Inside Dia. 4mm (Pack of 50)	PUN-H-6X1-SW
1228457 Inside Dia. 5.7mm, Suitable for Food Use (Pack of 50)	PUN-H-8X1,25-SW
1228460 Inside Dia. 7mm, Suitable for Food Use (Pack of 50)	PUN-H-10X1,5-SW

Pneumatic Regulators

- Maintain a constant working pressure, regardless of the pressure variations in the system and the air consumption
- Excellent regulation characteristics with low hysteresis and primary pressure compensation
- Available with and without secondary venting
- High flow rate with minimal pressure drop
- Regulator lock



FESTO

1259953 G 1/8 1000-7500L/min, 0.8 to 20bar	MS4-LR-1/8-D6-WR
1215659 G ¼ 1800L/min, 0.3 to 7bar	MS4-LR-1/4-D6-AS

AMTE Brass, Bronze 10bar Pneumatic Silencers

- For reducing noise levels of air exhausted from pneumatic systems
- Manufactured with a brass threaded body and bronze silencer insert AMTE silencers reduce noise levels to below 88 dbA
- Can be used in lubricated pneumatic systems



FESTO

1216000 Threaded, G 1/8 Male (20 Pack)	AMTE-M-LH-G18
1215999 Threaded, G ¼ Male (20 Pack)	AMTE-M-LH-G14
1216202 Threaded, G ½ Male (10 Pack)	AMTE-M-LH-G12
1216203 Threaded, G 3/8 Male (10 Pack)	AMTE-M-LH-G38

VUVS Series Solenoid Valve

- Extremely durable and sturdy
- Easy installation and replacement
- Ingress protection to IP67



FESTO

1215894 3/2, G-1/8	VUVS-LK20-M32C-AD-G18-1C1-S
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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 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

Temperature: -5...150° C

Media pressure: 1...6 bar

Flow (k_v): 0.7...18m³/h

www.festo.com



Prepare Your Workplace and Protect Your Staff

We understand how fundamental it is to ensure a comfortable and safe work environment for employees as they head back to work.

That's why we've introduced **RS PRO Protective Measures kits and bundles.**

These product solutions are designed to protect and support employees returning to work in production facilities and commercial premises as the COVID-19 restrictions start to ease. From solutions to provide each employee with hygiene and safety products, to facility cleaning products, from safe distancing essentials to temperature measurement, we've got the right products for your business.



Safety Signage

Our new range of safety signs are designed to help promote a safe work environment, keeping employees aware of potential hazards and reinforcing important safety precautions and policies.



Cleaning and Janitorial

Our new Janitorial Kits, comprise of shadow boards fully stocked with colour-coded cleaning equipment to streamline workplace procedures, segregate departments, and identify missing items at a glance.



Temperature Measurement

The new range of non-contact forehead thermometers can help ease the screening process at your workplace by easily detecting a person's temperature while reducing cross-contamination risk and minimizing the risk of spreading disease.

In addition to these kits and bundles, RS has added around 120 new product variants to its existing rich RS PRO offer that further support the demand for protective measures against the COVID-19 virus.

All RS PRO products are competitively priced and come with the RS PRO Seal of Approval, an assurance to customers that products are rigorously tested for quality, durability and consistency.

Visit rspro.com today

Supporting our customers, we're by your side.



High stock levels

\$660m of inventory readily available



Next day delivery

We use a national carrier network to maintain continuity of service



Order online 24/7

We are here when you need us, with up-to-date inventory levels



Product Plus sourcing

Whatever you need however obscure - we can get it



Best in class eCommerce experience

Our RS PurchasingManager® web order management tool & eProcurement solutions can help streamline ordering processes

Protecting our people



People First

Home working wherever possible. In the workplace - managed cells, social distancing, enhanced PPE requirements

By your side

Safe Distancing Bundle

- Introducing the RS PRO Social Distancing Kit that includes everything needed to set up and manage social distancing within a variety of environments
- It includes an infrared thermometer, a 2 m safety barrier and footprint-shaped floor labels as clear markers to indicate the correct distance



2013047 Safe Distancing Bundle

Area Signage Bundle

- This RS PRO area signage kit is essential to ensure clear and consistent floor markings to highlight walkways, safe spacing and working areas in a variety of environments



2013589 Area Signage Kit

Scouring Pads

- Extremely durable and very abrasive cloths
- Suitable for Industrial use
- With our without sponge



8988295 Sponge scourer (Pack of 10)

8988286 Heavy duty scouring pads (Pack of 10)

Shadow Boards Kits

- The RS PRO cleaning shadow board kit contains all the essential tools to maintain exceptional hygiene standards in a range of different environments
- Using a shadow board also helps quickly identify missing equipment, whilst providing a neat and tidy storage place when not in use



2013132 Style A (Blue)

2013133 Style A (Red)

2013134 Style B (Blue)

2013135 Style B (Red)

Vinyl Floor Graphics

- Vinyl floor graphics from RS PRO are the perfect solution for displaying specific actions and instructions regarding health and safety in a wide range of environments.
- These monomeric gloss vinyl safety signs are manufactured with permanent adhesive and are laminated with a matt clear embossed
- PVC over laminating film, providing excellent anti-suff and anti-slip properties



2013334 Wash Hands, 400mm dia

2013330 Wash Hands, 200mm dia

2013314 Wear Gloves, 400mm dia

2013349 Wear Gloves, 200mm dia

2013325 Wear Face Mask, 400mm dia

2013346 Wear Face Mask, 200mm dia

2013350 Use Hand Sanitiser, 400mm dia

2013340 Use Hand Sanitiser, 200mm dia

Zone Working Bundle

- The RS PRO zone working kit is an ideal solution to use for establishing clearly marked work zones for individual workers and removing the potential health and safety risk of employees being in close proximity of each other while working in busy manufacturing or industrial environments



2013136 Zone Working Kit

Mops and Mop Handles

- A range of RS PRO 16 ounce pure yarn mop heads
- Available in four colours to ensure no cross contamination between areas
- Strong and totally rust free aluminium mop handles



2186718 Blue Mop Handle

2187727 Red Mop Handle

2186803 Red Yarn Mop Head

2186825 Blue Yarn Mop Head

2398573 Yellow Yarn Mop Head

2398589 Green Yarn Mop Head

Hand Brushes for the Food Industry

- Hand brush with soft bristles is ideal for sweeping fine particles such as flour from conveyor belts, food preparation surfaces, tables and equipment



7756303 Blue	45873
7756319 Yellow	45876
7756315 White	45875

Bottle Brushes

- Tube Brush suitable for cleaning bottles, tubes and gaps between lines on conveyor belts
- Material: Polypropylene, Polyester, Stainless Steel
- Dimensions (Ø x L): 20 x 500 mm



8847551 Blue	53763
8847567 Yellow	53766
8847563 White	53765

Strong Hold Cotton Sheeting Cloth

- Soft absorbent rags ideal for polishing, wiping and spillages
- Screened to ensure they are hygienic and attachment free
- 3 kg packed in a equivalent 5 kg box for easy removal and portability



6673112 White sheeting rags	SHC 3KG
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Multi-purpose Cleaner for Food Industry

- Easy removal of dried on and wet sugar and sugar-based residues
- Formulated to rapidly dissolve and lift sugar deposits from processing equipment
- Removes a wide range of 'sweet' residues including fructose (e.g. fruit) and sucrose (e.g. animal feeds)



7457507 5L	31590-AB
-------------------	----------

20L Bucket With Handle

- Suitable for cleaning or storage of ingredients and food stuff
- The bucket has a wide drip-free spout, sturdy stainless steel hanger, hand grip at the bottom that is raised from the base and calibrated for a variety of measuring units
- The flat side prevents spillage and it has its own wall bracket



1766562 Blue	56923
1766633 Yellow	56926
1766632 White	56925

Clip Top Carrier Spill Kits

- Handy kit contained in a clip top plastic bag with carry handle
- 15 litre kit contains: 10 x pads 50 x 40cm, 1 x 1.2m sock, 1 x waste bag and tie



1927719 15 litre oil	H1290015
1927725 15 litre maintenance	M1290015

Wiping Paper Plus Food Contact Approved

- Wiping Paper Plus Free flowing
- Food contact approved
- Soft
- Strong
- Absorbent



1369610 510 m x 369 mm	130050
-------------------------------	--------

White Plastic Toilet Roll Dispenser

- Mini Jumbo Toilet Roll Dispenser Plastic
- Ideal for medium to high traffic
- Optimal roll brake included



1369641 132mm x 275mm x 345mm	555000
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Squeegees for Food Industry

- Polypropylene stock, rubber blade
- Application: containment of liquids in cleaning



3904416 Blue	77543
3904450 Yellow	77546
3904422 Red	77544

Foot Operated Hand Sanitising Station

- Quick and easy to set up
- Allows for hands free dispensing of hand sanitiser
- Can be used in a wide range of environments



2017831 Free Standing

Pocket Mask Resuscitation Mask

- One way valve with membrane preventing cross infection
- Comes with a protective case



7873688 Resuscitation Mask

Navy Cotton Polyester Reusable Apron

- 65% polyester, 35% cotton
- Fabric weight - 195gsm
- Dimension - length 86 cm, width 72cm



1370453 Unisex

Ear Defender Storage Box

- Manufactured from strong ABS plastic
- Dimensions 236 x 225 x 125mm
- Top opening preventing dust and dirt from entering the box



3256161 Storage Box

Grey Safety Glasses Anti-Mist

- CE certified
- Anti-scratch coating for added durability
- Free spec cord



1611581 Grey

RS Pro FW81 Slip-On Safety Shoes

- Outstanding slip-on style ideal for medical and food industries
- The easy to clean microfibre upper is practical, safe and durable
- Steel toecap and excellent slip resistance



1469008 UK 7

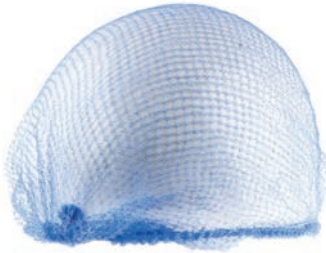
1469009 UK 8

1469010 UK 9

1469011 UK 10

Disposable Hair Net for Food Industry

- Blue nylon lightweight net which can be used alone or together with other headwear
- For use in food manufacturing, pharmaceuticals, electronics and in many other industrial applications



2155095 One Size (Pack of 100) T21220

E-A-R Soft Disposable Ear Plugs

- Comfortable Fit
- High Visibility
- Excellent Noise Reduction



7743959 33dB, 2000 Pairs (Pack of 200) 312-1250

Pheos Grey Anti-Mist Safety Goggles

- Duo-spherical lens with large field of vision
- Uvex supravision excellence coating: anti-fog on the inside, extremely scratch-resistant on the outside
- PC lens, grey 23 % VLI, Category 2



7689057 Gre 9192-300

White Over Shoe Cover For Use In Food

- Elasticated ankle
- PVC Sole
- Liquid splash and dust barrier properties (Type 5/6)



7564526 M to L (Pack of 10) 98710

4540+ XL Blue/White Disposable Coverall

- Innovative, soft and well draping laminated material
- Offering good protection against dusts and certain light liquid splashes
- Elasticated waist and ankles for convenience and freedom of movement and knitted cuffs for extra comfort
- Three-panel hood design for a better fit and compatibility with other PPE



7734494 XL 4540+ XL

Spectacle Cleaning Station

- Wall mounted lens cleaning station
- Four boxes of 450 non-abrasive absorbent tissues
- Mirror, mounting screws and adhesive stickers



2626058 Lens Cleaning Station 1007

Hyflex Reusable Gloves

- 20% lighter than previous versions of the same Ansell glove
- 0.8mm thick in total
- Offers good grip in dry or slightly oily conditions



484180 Size 10, Black 11-618/10
484174 Size 8, Black 11-618/08

Tracer Detectable Earplugs

- Metal detectable earplugs for maximum traceability, a surgical grade ball bearing is permanently fitted into the stem of each ear plug
- Produced from a thermoplastic elastomer, pre-moulded, non-toxic, and non-allergenic
- Can be sensed by most standard metal detectors (including those designed to reject metal combinations equal to or less than 2.78mm)
- Supplied in a box of 50



4244490 (Pack of 50) TR-01-000

Ultravision 9301 Safety Goggles

- Full vision safety goggle with unrestricted side visibility provided by 180° panorama lens
- Fits over most prescription spectacles. Anatomical shape and soft material allow close, yet comfortable, fit



2626604 Clear, Anti-Mist 9301-614



LATEST NEWS

RS Components wins Sydney Trains 7-year Supply Contract

RS is pleased to be the Preferred Supplier of Electrical Hardware and Consumable Goods via Sydney Trains eCatalogue.

Sydney Trains operates one of the geographically largest metropolitan rail systems in the world with a fleet of 2,216 electric and diesel carriages, travelling on 1617km of network track and stopping at 175 stations servicing 1.3M commuters per weekday.

Sydney Trains also operate the Rail Operations Centre and Depots, responsible for the maintenance of trains, assets including tracks, signals, and overhead wiring, along with a large proportion of the infrastructure used by NSW TrainLink.

This agreement, signed on the 15th January 2020 will give Sydney Trains 7 Years unrestricted access to the complete RS offer including the leading brands from Automation and Control, Test Equipment, Tools, Site Safety and Consumables.

Scott Philbrook, Head of Corporate Accounts for RS Components says the local stock holding to service the immediate needs of Sydney Trains puts RS in front. **“Our digital capability provides site users easy access to a global network of suppliers to suit the needs of the rail industry which is second to none in Australia. Our stock holding and understanding of the entire industry has helped many in this space.”**

RS Components have implemented complimentary value-added services to support the Rail sector such as Product Plus for sourcing and the Stockee Smart Shelf inventory management system, which created solutions for other rail MRO businesses in Australia.

RS PRO Donations continue to support Volunteer Firefighters across Australia



To assist ground crews of the Royal Fire Service (RFS) and Country Fire Authority (CFA), the RS Components team have been busy donating a range of RS PRO products to brigade members across Australia, with the intention of freeing up funds within these organisations to be utilised for other means.



Raegan Paay presenting the SA Bute Country Fire Service with much welcomed RS PRO product donations. "From all of us at Bute CFS, we would like to sincerely thank RS Components Australia for their kind donation and support shown to us, we are very grateful for the assistance." Ben Manners- Bute CFS Captain.



RS Components QLD Rep Tom Fitzgerald pictured delivering RS PRO products to the Brisbane Royal Fire Service in QLD.



RS Components NSW Rep Renel Ganancial pictured delivering RS PRO products to the hard hit Malua Bay RFS on the South Coast of NSW.



RS Components WA Rep Jason Byrne delivering some much needed multi-tools to the Bullsbrook Volunteer Fire Service in WA.



Every part matters

RS Components has already donated to nine RFS/CFA across Australia with more expected to be rolled out soon!

COVID-19 is a wake-up call for our fragile supply chains

By Syed Suroor Anwar

The coronavirus pandemic has proved a bitter pill for the world's business leaders to swallow and one unlikely to digest any time soon.

From delays to the new iPhone to shortages in medical equipment, the COVID-19 virus has exposed the fragility of our globalised economy and the tangled complexity of our global supply chains.

As an imports-driven economy, Singapore is particularly vulnerable to these unprecedented disruptions to international networks. As Minister for Trade and Industry Chan Chun Sing highlighted, the virus has proved "a good lesson for everyone to really look at the supply chain resilience".

For Singapore's modern consumers, online shopping and next-day delivery are as ubiquitous as eating in the local hawker stand. Yet behind every click lies a vast, tight and highly efficient web of supply channels built over decades of globalisation.

Ever since COVID-19 took hold of Wuhan back in January, the world has witnessed the true scale of businesses' heavy reliance on China for manufacturing.

As a wave of industrial closures and worker quarantines swept through the world's factory, businesses have grappled to secure their raw materials and components as their suppliers' production ground to a halt. The domino effect of this has resulted in suppliers and logistics channels struggling to deliver their goods.

Multinational giants from Apple to Hyundai, alongside Singaporean firms like Straits Construction, have faced lengthy product shipment delays from China in the wake of the pandemic.

Even now as China shows signs of recovery, supplies remain disrupted as South Korea, Japan and Europe attempt to mitigate their own COVID-19 outbreaks, creating bottlenecks across logistics networks. For the end-customers, delayed shipments carry issues both in terms of an inventory shortage and for their cash flow.

Not only do these bottlenecks harm businesses on the import side, they also hit those who are trying to export goods to coronavirus-affected markets. Countries like Australia, which exports huge quantities of coal, iron ore and seafood to China, are already facing economic declines due in large part to the fall in shipping.

Nevertheless, whilst the coronavirus is unique in its level of societal devastation, it is not rare for supply channels to face such disruptions on a global scale. Fortunately, in Singapore's case, the Indonesian sand crisis of 2007 proved to be enough of an incentive to diversify its supply sources.

However, it is not always possible to source certain parts from different places, either due to geography or intellectual property requirements. Considering this, there is a strong argument for better oversight further up the supply funnel.



From Reactive to Proactive

Thanks to digital transformation and the availability of supply chain management tools and big data, specialist trade organisations are in a better position to anticipate these unforeseen circumstances. With the right data and channel visibility, companies can monitor their flows of inventory, map potential disruptions and use the global network create strategies to mitigate these and minimise the impact to end customers.

Effective supply chain management gives the companies a competitive advantage over their rivals and helps them eliminate waste and reduce inherent risks. However, few seem to be using these management tools enough. According to Harvard Business Review, the majority of companies around the world have responded to the pandemic in a “reactive and uncoordinated way,” due to a lack of clear information and visibility of their channels.

Chief executive officers should see the current crisis as an opportunity to re-evaluate their procurement management, switching from a reactive to a proactive mindset. This can include, where possible, planning and activating alternate sources of supply, utilisation of digital and supply chain specialists,

using the most up-to-date technology to keep track of goods, from factory to freight. In addition to this, CEOs and managers need to be communicating all the possible supply chain risks with their employees, alongside risk-prevention measures.

Whilst the Red Dot has been held up as a model on the world stage for detecting and containing the virus, business leaders themselves should set a standard for protecting their employees, either through hygiene education or screening protocols. For companies that supply, produce or distribute from an impacted country, it is important to focus on workforce and labour planning, so staff are both protected, and resources are managed effectively.

The global picture of the world’s eventual recovery from the pandemic looks bleak: as of early July, the number of cases stands at almost twelve million and only a few nations are showing signs of flattening the curve. For most organisations, it will still take at least six months before they can claim to be “business as usual” again. But if organisations choose to adopt the right risk assessments, supply chain management strategies and communication with employees and stakeholders, they will emerge from this stronger. As it is often said, prevention is better than cure.

Syed Suroor Anwar Vice President–Strategy and Commercial for Asia Pacific - RS Components

Syed Suroor Anwar has vast international experiences in Asia, Europe and North America with key e-commerce and technology companies. As Vice President of Strategy and Commercial for APAC, Suroor is responsible to formulate the Go-to-market Strategy for RS APAC and implement that through managing the overall product and supplier offer on the website and sales enablement through digital marketing, sales effectiveness and customer experience.



DPI 705E Series

Druck Handheld Pressure Indicators



Safe Area
Pressure Indicator



Hazardous Area
Pressure Indicator

The Druck DPI 705E Series of handheld pressure and optional temperature indicators combine tough and rugged design with accurate and reliable measurements.

Compact and robust, the DPI 705E Series is designed for single handed operation and provides many essential features required for routine maintenance and system troubleshooting.

Features

- 48 pressure ranges from ± 25 mbar to 1,400 bar (± 1.69 psi to 20,000 psi / 2.5 KPa to 140 MPa)
- Total 1 year uncertainty down to 0.05% full scale (FS) over temperature range of -10°C to $+50^{\circ}\text{C}$
- Integral calibration record with calibration due count-down display
- Rugged, handheld design with backlit high-contrast display
- Leak test, tare, maximum/minimum and filter
- Hazardous Area (Intrinsically safe) version available
- Optional remote plug and play pressure and Resistance Temperature Detector (RTD) sensors
- Optional pneumatic and hydraulic hand pumps

To view the range,
search DPI705E at
RS Online today!

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



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
2012878	350 bar, Safe Area	DPI705E-2-03G-P1-H0-U0-OP0
2012867	10 bar, Safe Area	DPI705E-1-11G-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



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

PM700E Remote Sensor Cable

- The Druck Gauge Remote Sensor Cable which is 2.9m long which can only be interfaced or used with PM 700E External Remote Pressure Sensor.



2012898	700bar	PM700E-CABLE
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RTD Hazardous Area Probes

- The Druck Optional remote RTD temperature Interface/Probe Enabling users to perform plug and play temperature measurement capability, displaying units as resistance or temperature



2012896	Hazardous Area	RTD-PROBE-IS
2012895	Safe Area	RTD-PROBE-485

Fluke T5 Digital Multimeters

- Easy and accurate OpenJaw™ current measurement in a single conductor or single core cable
- Automatically measures AC & DC volts
- Displays resistance up to 1000Ω



FLUKE

2921230 1000Vdc, 100Aac Fluke T5-1000
2919372 600Vdc, 100A ac Fluke T5-600

Fluke 117 Handheld Digital Multimeter

- VoltAlert Technology for integrated non-contact voltage detection AutoVolt feature for automatic AC/DC voltage selection
- LoZ: Low input impedance to eliminate stray voltage
- Large white LED backlight



FLUKE

6161460 10A ac 600V ac 10A dc 600V dc FLUKE 117 EUR

Fluke 175 Handheld Digital Multimeter

- Provides the baseline multimeter features you need for troubleshooting and repairing electrical and electronic systems
- Delivers accurate true-RMS AC current and voltage plus frequency, capacitance, resistance, continuity and diode measurements
- Increases productivity with manual and automatic ranging, Display Hold, Auto Hold, and Min/Max-average recording



FLUKE

3944470 10A ac 1000V ac 10A dc 1000V dc FLUKE-175

Fluke 62 MAX Thermometers

- Fluke's MAX series are precise and designed to resist a 3 meter drop
- IP54 rated for dust and water resistance
- Absolute maximum temperature measurement +650°C



FLUKE

7600385 FLUKE 62 MAX
7600389 FLUKE-62 MAX+

Fluke 789 ProcessMeter™

- 0-20 mA DC current source/loop calibrator/simulator with auto and manual step/ramp
- Offers HART mode setting with loop power and a built-in 250 ohm resistor
- Provides all standard DMM capabilities including V, A, Hz, Diode test and continuity



FLUKE

4477707 1A FLUKE 789

Fluke Test Lead Sets

- Fluke test leads for your Fluke meters and test tools



FLUKE

7414358 TwistGuard™ Test Leads TL175
4502358 SureGrip™ Insulated Test Leads TL224

Fluke 325 Clamp Meter

- The Fluke 320 series True-RMS clamp meter measures current up to 400A AC/DC and voltage up to 600V AC/DC
- This product is designed to verify the presence of load current, AC voltage and continuity of circuits, switches, fuses and contacts



FLUKE

7653660 400A ac, 400A dc CAT III 600V, CAT IV 300V FLUKE 325

Fluke 179 Handheld Digital Multimeter

- A full-featured, precision multimeter for troubleshooting electrical and electronic systems
- Delivers accurate true-RMS AC current and voltage plus frequency, capacitance, resistance, continuity and diode measurements
- Increases productivity with manual and automatic ranging, Display Hold, Auto Hold, and Min/Max-average recording



FLUKE

3944492 10A ac 1000V ac 10A dc 1000V dc FLUKE-179

Fluke TPAK ToolPak™ Magnetic Meter Hanger

- Solves almost any hanging and positioning problem you may face
- The universal hanger allows you to hang your meter on nails, hooks and many other objects
- Compatible with many Fluke instruments



FLUKE

3317402 For Use With Fluke instruments TPAK

U1242B Handheld Digital Multimeter

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



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

MIT410 2 Insulation Tester

- Stabilised insulation test voltage
- 600 V TRMS AC and DC voltage measurement
- Live circuit detection and protection



9214510 200GΩ CAT IV 600 V 1006-735

RS-3893 Thermo-Anemometer

- This RS PRO anemometer has a high-quality and robust design that offers accurate and reliable results and can be used across a variety of applications



1938696 Air Flow, Air Velocity, Temperature

HI 98509 Digital Thermometer

- One of the world's most accurate temperature testers
- Temperature range -50 to +150 °C (-58 to +302 °F)
- Resolution 0.1 °C (0.1 °F)



8464708 1 Input Pocket, NTC Type Input HI98509

RS AT-6 Non-Contact Tachometer

- This RS PRO non-contact tachometer has been designed with a durable and robust housing for use in challenging environments while offering an intuitive and easy to use interface for optimum ease of use



1938687 Non Contact

Kern Weighing Scale

- Adjusting program (CAL)
- Stainless steel snap link with safety catch and 15 mm aperture
- Up to 200 kg weighing range



7007055 200kg Capacity HCB 200K500

Megger MFT1825 Electrical Tester

- Simple colour-coded test selection and large clear backlit display for ease of use
- Two and three wire non-trip loop testing for RCD protected circuits
- Internal memory and Bluetooth® communications



9011330 2 Wire, 3 Wire MFT1825-AU

How Calibration Improves Optimisation

Brought to you by **FLUKE**

With the fluctuating price of raw materials, industries are faced with a challenge to adjust to the times and the profit margins. One of the few ways to control costs in all of industry, in fact, is to get leaner and more efficient.

And one of the best ways to control those costs is finding the waste in your process. That means a lot of fine tuning to make sure, from an instrumentation standpoint, that you're getting the temperatures and pressures right for high quality production and the efficient use of input.

Calibrating equipment improves optimization and quality—and that holds true in other process industries as well, whether it is chemical processing, nuclear power, pharmaceutical or pulp and paper. Process manufacturing plants require hundreds, even thousands of sophisticated devices that perform countless critical operations ceaselessly, accurately, and reliably. Those devices in turn require regular inspection, testing, calibration, and repair.

Centuries of industrial experience has established the value of carefully recording the details of those inspections, tests, calibrations, and repairs. More than a best practice, businesses and governments often require highly specific record keeping to assure that full value is delivered to customers and that the health and safety of citizens is protected.

However, traditional testing, calibration and documentation practices are also labor-intensive, and with senior operators in scarce supply, down-sized teams sometimes choose to defer regular calibration. The latest industry findings suggest that smaller teams can feasibly conduct and document device calibrations, at a lower overall cost, with additional productivity and operational reliability benefits.

Calibration is typically performed either where the device is located (called in situ calibration, from the Latin for "in position") or in an instrument shop.

Pro tip: When a field instrument is manufactured, both the primary element and the transmitter (or the actuator, if a control valve) are calibrated at the factory and the calibration information is supplied with the unit. This calibration data is often lost. Entering this information into centralized calibration records when the device is put into service should be part of standard work, and not just for efficiency's sake. Centralizing calibration information ensures knowledge stays with the facility even as teams change.

Most field instruments are made up of two parts: a primary element and a transmitter.

- Primary elements include flow tubes, orifice plates, pressure sensors, wet chemistry sensors such as pH, ORP, and conductivity probes, level gauges of all types, temperature probes, and others. Primary elements typically produce a signal—usually voltage, current, or resistance—that is proportional to the variable they are designed to measure, such as level, flow, temperature, pressure, or chemistry. Primary elements are connected to the input of field transmitters.
- Field transmitters include pressure, temperature and flow devices. They process the signal generated by the primary element, first characterizing it in linear format and applying engineering unit coefficients to it, before then transmitting it in analog (usually 4-20 mA dc) or digital format (usually some variety of fieldbus).

Analog devices

Analog devices—often called “4 to 20 milliamp loop” devices—are so called because they transmit a signal that is an electrical “analog” representation of a measured physical quantity (temperature, for example). They transmit an electric current that is proportional (analogous) to the magnitude of a measured physical quantity, with 4 milliamps of current representing the minimum scaled value and 20 milliamps representing the maximum scaled value. Although many system aspects are now digital, analog devices are still in active use throughout the process manufacturing world.

Digital devices

Digital devices convert a measured physical value into a digital signal. Many different digital encoding methods are used in the process industry, including Foundation Fieldbus, Profibus, and HART. There is a widespread belief that fieldbus (digital) field devices do not require calibration. This is not true. Although a fieldbus signal (whether Foundation Fieldbus, Profibus, or connected HART) provides diagnostic information, it does not provide information about the accuracy of the device, nor does it verify that the device is reporting the process accurately and precisely.

Top 3 calibration tools to keep your processes lean

- Fluke 754 Multifunction Documenting Calibrator with HART capabilities and automated calibration procedures and of course, meets rigorous safety standards.
- Fluke 721 Precision Pressure Calibrator high precision with dual isolated sensors for gas custody transfer applications.
- Fluke 700G Precision Pressure Gauge Calibrator high-quality and rugged, high-quality pressure for fast and accurate test results.

Control valves

Control valves have actuators that also require calibration to adjust for wear, re-packing of the valve for leakage remediation and the effects of sticking or “stiction.” Often these valves must be given a full or partial stroke test if they haven’t been actuated regularly to ensure dependable operation.

Permitting and paperwork

Administrative tasks, from getting permits to documenting and filing results, can add to the cost and time required to perform even an in-situ calibration. As Ian Verhappen, of Industrial Automation Networks, and a former Chair of the Fieldbus Foundation User Group, has said, “In many cases getting all the necessary paperwork (permits, isolation, etc.) in order often takes longer than the work itself.”

Challenges of documenting calibration

Documenting a calibration has traditionally meant using a logbook to hand-write the date and time, the pre-calibration readings, the post-calibration readings, and any other observations the technicians made. Surprisingly, many plants continue to document calibration work by hand. But pencil-and-paper documentation has many shortcomings.

First, it both produces and perpetuates errors. The data in handwritten records is often simply illegible or insufficient. Facilities that use a computerized maintenance management system (CMMS) must then account for the additional time required to manually enter handwritten data, with additional possibilities for error.

Changing workforce

The 1980s brought budget cuts and layoffs. Engineering, maintenance and operations staffs were cut substantially and a new “lean manufacturing” philosophy took root that continues today, especially in developed economies.

Smaller teams have less time for mentoring and on-the-job training, to the point where equipment and system-specific knowledge is not being successfully transferred from the individual to the institution. As older operators and engineers retire, they take their equipment and system knowledge with them.

“Every day at 4 pm, the plant’s institutional knowledge walks out the front gate,” says the Chief Instrumentation and Controls Engineer of a large Midwestern refinery, “and sometimes it doesn’t come back.”

Meanwhile, many facilities still need two technicians for each in-situ calibration—one at the transmitter and one at the control system. The Fieldbus Foundation estimates that commissioning requires two techs for a minimum of two hours.

Use multifunction, documenting calibrators

A new generation of “smarter” field calibration tools are increasing worker productivity by consolidating multiple tools into one and performing functions beyond basic test and measurement, such as assisting with analysis and documentation. Multifunction “documenting process calibrators” are handheld, electronic test tools that consolidate multiple calibration steps and functions into a single device, sourcing simulating and measuring pressure, temperature, and a wide variety of electrical and electronic signals.

Benefits:

- Fewer tools that technicians need to train on and carry into the field
- Similar calibration processes and data output across multiple devices, compared to a different process to collect a different set of data from each tool and device
- Automated procedures replace many manual calibration steps
- No second technician required to record the as-found and as-left state of the field device.
- Faster calibration time per device
- Calculate the error of a single tool rather than adding the errors of several tools

Use calibration routes

The biggest savings from using a documenting calibrator comes in the route management tool built into the device. Using a single set of permits and paperwork for an entire set of calibrations reduces costs considerably. Implement an asset management, calibration management, or computerized maintenance management system (CMMS).

Unlike paper documentation, calibrator data is never illegible, cryptic, or partial. Documenting calibrator data can be directly downloaded into a variety of different CMMS systems with no transcription or filing. Because documenting process calibrators automatically record the as-found and as-left state of each field device, in situ, and can be operated by a single technician, route-based practices utilizing documenting calibrators can save as much as 50 percent of the time and cost of traditional manual, single-device calibration methods. Stated differently, the same lean team can accomplish twice as many calibrations in a given period of time.

Running a lean team under the traditional operational requirements is a recipe for error. Calibrations simply don’t happen the way they should. Instead of ignoring the looming threat, investigate how existing practices can be made more efficient. Implement route-based calibration, paperless documentation, and CMMS data management. More calibrations will occur more consistently, knowledge will be transferred from the individual to the team and to the institution, and both productivity and quality will increase.

Calibrating multiple instruments in the course of a route reduces the cost per calibration, compared to individually calibrating single instruments. Besides saving maintenance costs, the legal costs and lost revenue from accidents can be in the millions. Good calibration maintenance practices help reduce the probability of such an incident. If the event that disaster strikes, good calibration records can be a part of a facility’s defence in the event of legal action just as poor records can put an organization in a less defensible legal position.



Switch Key Universal Wrench

- Multi-purpose enclosure key wrenches designed for use within maintenance & service applications
- The four arms of the tool offer five differing drive possibilities
- Available with either a bright chrome or zinc plated finish



4393025 Zinc Finish

4393019 Chrome Finish

RS PRO Torx ESD Screwdriver T6 Tip

- ESD safe handle with 10⁹ - 10¹⁰ Ohm resistance
- Rotating cap



8640851 50 mm

Jobber Drill Set

- 118° web thinned point reduces the amount of thrust required
- Precision engineered parallel shank for accurate hole size
- Made from M2 High Speed Steel (HSS) offering the best combination of strength, heat & wear resistance



suttontools

2552612111 100 Piece

D102SM99

Carabiners 316 Stainless Steel Snap Hook

- Stainless steel construction with excellent corrosion resistance
- Quick and easy to attach or detach tools and other equipment
- Perfect for working at height to reduce injury and damage or loss of tools



9103350 300kg

MOUSQ6X60SLS

Nipper Cable Cutter

- Black corrosion resistant pliers Polished head
- Plastic coated handles
- Length 280 mm



1367418 End Cutting

68 01 280

FX600 Soldering Iron

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



7688985 50W

FX600-14

RS PRO Driver Bit Set 32 pieces

- RS Pro 32 piece Colour ring bit set offers a comprehensive range of popular screw bits in one handy set
- Colour coded bits to make size identification easier



1250441 32 pieces

Insulated Cutting Pliers

- Precision Machined Knife And Anvil Style Cutting Edges Ensures perfect mating and superior cutting edge life.
- Laser Heat-Treated For longer lasting cutting edges
- High Carbon Steel For superior performance and specially coated for ultimate rust prevention



suttontools

2552612109 203mm

3238

12 Piece Combination Ratchet Spanner Set

- Ratchet ring only needs 5 degrees to operate making it ideal for use in tight spaces
- Spanner size stamped on wrench for instant identification
- 12 point ring design



GEARWRENCH

7686828 12 Piece

85597

RS PRO 150 mm High Carbon Steel Hand Saw Blade

- A high speed steel cutting edge, electron beam welded to a flexible alloy back
- Cuts through virtually any type of steel and is unbreakable in normal use



1853710 32 TPI (Pack of 10)

RS PRO 8 pieces Hex Key

- Comprised of a chemically blackened, chrome vanadium steel
- The high quality materials offer a long life and service
- The set features a compartmental plastic wallet



4501002 L Shape

RS PRO Pallet Wrap

- Stretch and seal food grade film supplied with re-usable handle



3295920 100mmx 100m (Pack of 10)

RS PRO 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



6159164 Automatic

Temflex 1755 Rubber Black Cloth Tape

- PVC insulation tape with good electrical and mechanical properties
- High dielectric strength 40 kV/mm
- Self extinguishing
- Good resistance to abrasion, moisture, alkalis, acids, corrosion, varying weather conditions and ultraviolet exposure



8409026 19.1mm x 18m, 0.33mm Thick 1755-3/4X60FT

Food Safe Silicone Sealant Paste

- Conforms to BS5889 Type B
- Fast cure
- High modulus-acetoxy cure type



4590232 310 ml cartridge 6011088

Xcelite Fine Point Diagonal Knife Blade

- Scalpels for delicate work
- Knurled end for more secure handling and a firm grip



6756709 Fine Point Diagonal (Pack of 5) XNB103

Food Safe PTFE Lubricant

- Wide temperature resistance ranging between -50°C and 120°C
- Exhibits excellent water displacing and penetration properties ensuring optimum performance even when used on damp or wet components



5127784 300 ml 15010

Transparent Liquid Super Glue for Elastomer

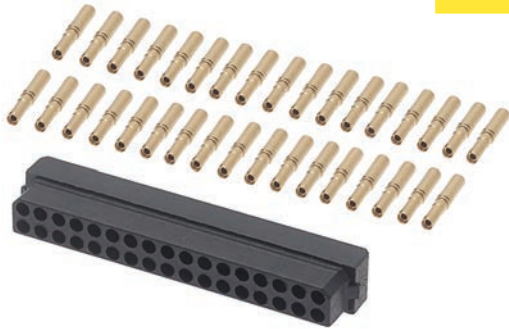
- Low viscosity instant adhesive
- Ensures uniform fast-fixturing of 'difficult' rubbers and elastomers
- Bonds polyethylene, polypropylene and polyolefin plastics when used with Loctite 770 Primer



514600 20 g LOCTITE® 406

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- Low frequency cable socket connector kit with a compact 2mm pitch design that offer industry standard high reliability



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LDA30F-15-SN

Harmony XVB Series Flashing Beacon

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UPS Replacement Battery Cartridge

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7794008 Replacement Battery Cartridge

APCRBC105

CSL Series Open Loop Current Sensor

- AC or DC current sensing with linear output



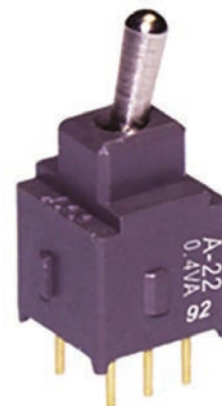
**SAVE
16%**

1812135 0 → 150A

CSLA2DG

Toggle Switch

- Compact structure, 13.1mm excluding lever



**SAVE
23%**

3542636 DPDT

A-22JP

2 Position 90° Rotary Switch

- Standard handle selector switches



**SAVE
10%**

6095486 600 V ac/dc, 6 A ac, 550 mA dc

XB4BK124B5

Cable Trunking Coupler

- White high impact PVC accessories



**SAVE
15%**

605295 uPVC 25 x 16mm (Pack of 10)

MTC2

Bahco Crow Bar

- Heavy-duty pry bar with rounded, pointed end and a shallow end for prying and lifting



**SAVE
10%**

7179289 406 mm

3684-16

Chrome Vanadium Steel Standard Screwdriver

- Round steel shafts fully hardened and tempered high grade chrome vanadium



**SAVE
28%**

544639 Flared 1/4 in Tip

SDO432

PVC-Coated General Purpose Gloves

- Close fitting and breathable for maximum flexibility and comfort



**SAVE
17%**

5081408 One Size, Orange

CSP156/MNS

RS PRO Plastic Fire Safety Sign

- Environmentally friendly and durable



**SAVE
26%**

7631822 90 x 280mm

FR02124R

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