AUTOMOTIVE & VEHICLE MANUFACTURING

The automotive industry is continuing to transform. With automation, big data, AI and electric solutions, there are many challenges and shifts facing manufacturers.

RS is here to help you keep up with the pace of these developments and face the future of the industry.

RS

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Join the conversation

Terms & Conditions

The automotive industry is changing. Let RS help you keep up.

It's hard to think of an industry facing more changes than automotive manufacturing. There's the shift towards electric powertrains led by a greater public demand and a consumer led desire for connected automobiles, all supported by increasing digital transformation. We also know that for a product to evolve the organisation that builds the product needs to keep up with technological advancements.

RS is here to help you keep up with the pace of developments and face the future of the industry.

No matter where you are, we ensure your products get delivered as efficiently and carefully as possible.

Leave the how to us.

Your one-stop shop
Get access to over 750 000 products across various product categories and brands ensuring that you get the best value without having to shop around.

Easy Ordering
Get free delivery on orders over R1000, no minimum order quantity required. Order online, via email and phone or visit our local trade counter.

Trusted Global Brands
We source and partner with over 2500 global brands that you know and trust to give you access to the widest range of genuine parts.

Customer Support
Out team is on hand to support with all your queries – contact us via phone, email or speak to us on LiveChat.

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Access our website at any time on any device and shop at your own convenience. Plus you get instant access to technical datasheets that you can download.

Flexible Delivery Options
Local stocked delivered within 24 - 48 hours. Global stock delivered within 4 - 6 working days.

RS PRO
Try our private label brand that has been designed according to industry standards with high quality and performance – save up to 30% against other brands.

Helping Keep The Automotive Industry Moving

The Automotive and specialist vehicle manufacturing sector has been experiencing a renaissance over the last few years.

The automotive equipment sector produces everything from cherry pickers, ambulances and military vehicles to sports cars, tractors and buses.

RS Components have supported numerous specialist vehicle manufacturers and R&D centres with our market leading Electronics & Electrical components offer for many years, giving them access to the latest products as well as design tools. Other sections of the industry including plastic component makers, foundries, gearbox & drivetrain manufacturers and Formula 1 teams have also benefited from our product offer and our world class service.

We are confident that RS can help the Automotive sector thrive and maintain it's competitive edge in the growing global market, and will continue to develop our offer of products and services to meet the needs of the industry.

Common Industry Requirements

We believe that across the industry there are some common challenges and requirements that RS can help support and address:

Reducing Downtime

Unplanned downtime due to equipment failure can be very costly in terms of both lost time and production output, and materials wastage.

Solution: Undertaking regular inspections of parts using non-intrusive tools, such as infra-red thermal imagers and vibration analysers or monitoring and control relays can help you detect and predict issues before they lead to failure. RS can provide advice on the right solution for your application.

Re-working existing application or design

There is often a requirement to re-work designs for a new customer, or re-task existing machines for the production of a new part or assembly.

Solution: RS provides FREE access to its DesignSpark suite of software design tools. This now includes 3D mechanical design, Electrical design and PCB design. All the tools are free to download, activate and use. Find out more online at www.designspark.com

Energy Management

Knowing how much electrical energy is used by different parts of your process will enable energy efficiency measures to be implemented.

Solution: Local Power Monitoring. RS has a range of kWh power meters which can be easily retro-fitted to provide a local indication of power usage. The range includes a variety of capabilities from simple local kwH measurement to power factor & datalogging capability. The RS offer also includes a comprehensive range of energy efficient solutions such as IE2 motors, variable speed drives, and low energy lighting.

The Linecard

This linecard helps as your guide to the key technologies and brands in our offer which are most relevant to the automotive machinery and vehicle manufacturing sector.

Sensing

Inductive and photoelectric sensors are used extensively within the production line. Other sensors such as temperature and pressure are also used on-vehicle

RS PRO | SICK | PEPPERL+FUCHS | OMRON | BALLUFF | Baumer | Druck

Switchgear

Push buttons, limit switches, control stations, isolators, contactors, and industrial relays are used within the production line control system and within the end product

RS PRO | Panasonic | Schneider Electric | ABB | EATON | Honeywell | OMRON | Crouzet | finder

Power Transmission & Conveying

Conveying operations within the manufacturing line use power transmission components and these require regular maintenance to avoid unplanned production downtime

RS PRO | ABB | SIEMENS | igus | SKF | NSK | TECO | Continental | Rexroth Bosch Group

Motion Control

Many parts of the process require motor-driven motion often combined in panel control via a variable – speed drive, soft start and the AC or DC motion on the machine

RS PRO | ABB | Crouzet | Schneider Electric | EATON | SIEMENS

Process Control

Will control virtually all processes within the manufacturing line – either individual machines or an entire production line

RS PRO | Schneider Electric | SIEMENS | OMRON | LASCAR electronics

Machine Guarding

Machine guarding & safety components are a key requirement. The range includes switches, light curtains safety relays, e-stop push buttons & rope pulls

RS PRO | ABB | SICK | pilz | SIEMENS | PHOENIX CONTACT | Honeywell | SCHMERSAL | WERMA | OMRON

Lights & Signalling

LEDs to Heatsinks that protect the performance of the lighting system are available through RS

RS PRO | OSRAM | ON Semiconductor | Dino-Lite

Cables & Cable Management

Electrical wiring is a huge element in vehicle systems. RS offers products and accessories to manage complex wiring systems

RS PRO | Schneider Electric | HellermannTyton | DELPHI | TE | DEUTSCH

Mobile Power

Transistors, connectors, isolators, drivers and voltage protection are all requirements within the auto industry

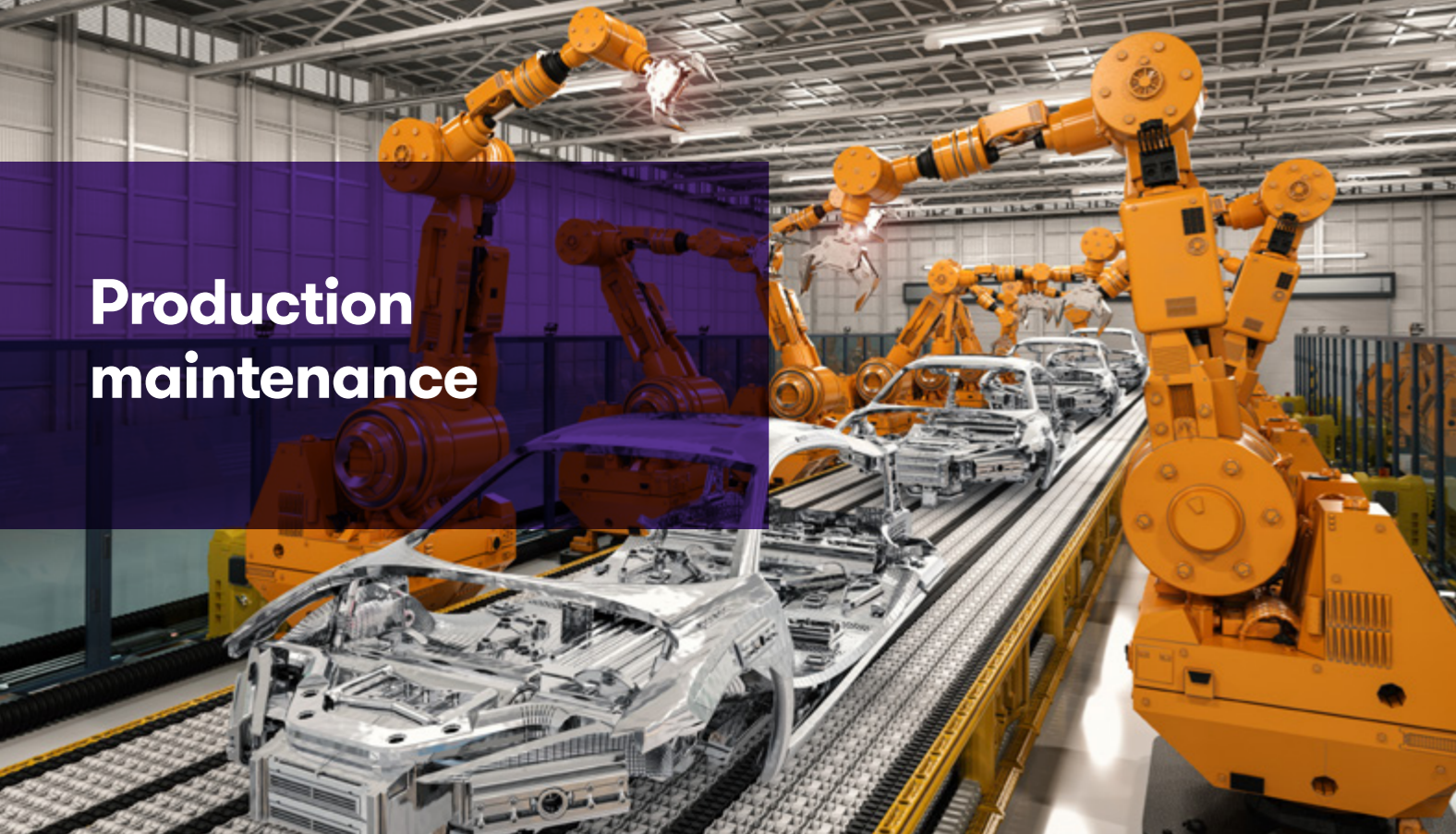RS PRO | Witra | ANSMANN | TTI

Essentials

From H&S to PPE, all facilities can be supported with essential products

RS PRO | 3M | Weller | KÄRCHER | C&K | MYKAL

Production maintenance

3 Phase Induction AC Motor

- A range of robust and efficient induction motors ideal for a wide range of industrial applications.3-phase induction motor
- Frame 63-160
- Thermistors Fitted as standard
- Located Bearing at NDE
- Reinforced bearing housing
- 80-112 DE Only
- 132 & 160 DE & NDE

RS PRO

187-9882	5.5 kW, IE3, 3 Phase, 2 Pole, 400 V, Foot Mount Mounting
187-9871	1.5 kW, IE3, 3 Phase, 2 Pole, 230 V, 400 V, Flange Mount Mounting
187-9896	15 kW, IE3, 3 Phase, 2 Pole, 400 V, Foot Mount Mounting
187-9858	0.75 kW, IE3, 3 Phase, 4 Pole, 400 V, Foot Mount Mounting

Eaton 22 kW Automatic DOL Starter

- Open chassis Star Delta starter for use within customised enclosures, enabling quick and easy installation and direct mounting onto 35mm DIN rail
- Manufactured using readily available Moeller components which conform to the latest IEC 947 standards
- Pre-wired to accept the Moeller Z00 or ZB thermal overloads which offer single phasing sensitivity to IEC 947-4
- Terminal protection to IP20
- Operating temperature range -25 to +40°C

EATON

535-2227	110 V ac, 3 Phase, IP55

Schneider Electric Inverter Drive

- Wall-mounting drives, built-in cabinet and floor-standing solutions are available with IP 21, IP 23, IP 54 and IP 55 protection degrees
- Embedded pump monitoring
- Notification of critical operation points without having to have additional sensors
- Process integration with pressure, flow and level control including compensation of flow losses
- Innovative "Stop & Go" function
- Data logging and graphic display of the power consumption
- Embedded web server interface which is based on the Ethernet network, giving you process monitoring with your daily work tools
- Local and remote access to energy use and customized dashboards
- Standardized FDT/DTM and ODVA technology as well as being supported by predefined Unity Pro libraries

Schneider Electric

872-4076	3-Phase In, 0.1 → 500Hz Out 55 kW, 400 V with EMC Filter ALTIVAR 630, IP21
872-4085	3-Phase In, 0.1 → 500Hz Out 75 kW, 400 V with EMC Filter ALTIVAR 630, IP21
872-4060	3-Phase In, 0.1 → 500Hz Out 30 kW, 400 V with EMC Filter ALTIVAR 630, IP21

Mitsubishi Inverter Drive

- Simple cabling, the integrated spring clamps connect control and power lines quickly which ensures simple cabling and reliability.
- Easy parameterization software FR-Configurator which allows for easy functions such as graphical machine analysis to optimize the drive system.
- An integrated digital dial facilitates the user's direct access to all of the important parameters.
- The integrated four digit LED display monitors and displays current operating values and displays alarm messages.
- This particular model features a second transistor output, which is sink selectable source logic safety input instead of sink logic.
- Directly connects to a PLC's instead of safety relays.
- Features a sensor-less vector control, which enables torque and exceptional speed performance.
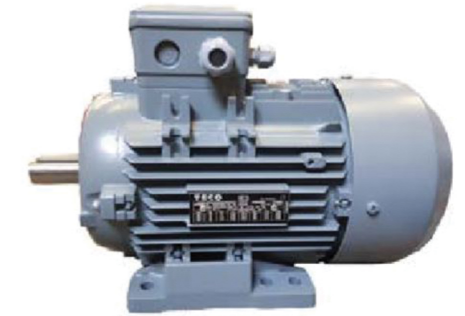- Serial interface (RS485) as standard.

MITSUBISHI ELECTRIC

767-3021	1.5 kW, 3 Phase, 400 V ac, 3.6 A, FR-D740 Series
767-3028	3.7 kW, 3 Phase, 400 V ac, 8 A, FR-D740 Series

Siemens Milltronics Motion Sensing

- Probe can be mounted up to 100mm from target
- Selectable over-speed or under-speed detection
- Start-up time delay
- Temperature rating: -40°C to +60°C
- IP67 rated (probe)
- NEMA 4X, polycarbonate enclosure (alarm controller)
- Aluminium Body (probe)
- Requires a motion sensor 804-4102 for operation

SIEMENS

804-4086	Siemens Motion Sensing Alarm Motion Sensing Alarm Unit
804-4102	Siemens Motion Sensor Motion Sensing Probe

Schneider Electric Soft Start ATS48 Series

- Exclusive Altistart torque control (patented by Schneider Electric)
- Constant control of the torque supplied to the motor during acceleration and deceleration periods (significantly reducing pressure surges)
- Facility for adjusting the ramp and the starting torque
- Starter can be bypassed using a contactor at the end of the starting period whilst maintaining electronic protection
- Wide frequency tolerance for generator set power supplies
- Starter can be connected to the motor delta terminals in series with each winding
- Built in motor thermal protection
- Processing of information from PTC thermal probes
- Monitoring of start time
- Motor preheating function
- Protection against underloads and overcurrents during continuous operation

Schneider Electric

820-1006	88 A Soft Start ATS48 Series, IP00, IP20, 75 kW, 208 → 690 V ac
820-0996	250 A Soft Start ATS48 Series, IP00, IP20, 250 kW, 208 → 690 V ac

Challenges and opportunities within the Automotive Industry.

Bring it on.

Empowered. From innovation to industry.

3M Peltor ProTac III Hearing Protection Headset

• Hearing protector helps protect against harmful noise, whilst allowing ambient sounds to be hear.

• Built-in level-dependent function allows the wearer to hear ambient sounds, such as conversations, machine sounds and warning signals.

• 3.5 mm stereo jack to connect to your mobile phone or two-way radio to hear the call right in your ear.

• Auto power off turns headset off after 4 hours of non-use, to save energy and a low-battery warning informs you when to change batteries.

• Voice guided menu system so no need to take your headset off.

• To reduce the corrosion caused by sweat the electronics are located in the outer part of the cup

3M Peltor™

123-8888   3M PELTOR ProTac III Listen Only Communication Ear Defender, 32dB

3M Peltor LiteCom™ Plus Headset

• Up to 1 km range • Built in 2 way radio communication
• 8 channels (PMR 446 MHz), 69 channels (LPD 433 MHz)
• 121 digital & analogue subchannels per radio channel
• Level-dependent function for ambient listening
• Li-ion rechargeable battery with 20 hours operating time
• Secondary external input
• Voice operated transmission (VOX)
• Auto power off function
• Battery status indication
• Voice guided menu system

3M Peltor™

494-9791   3M PELTOR LiteCom Plus Speak & Listen Communication Ear Defender, 32dB

3M™ Half Mask, One Size, Dual Inhalation Valves

• Breathe easy in hazardous environments with this half mask from 3M. It has bonded carbon particulate filters to prevent you from inhaling organic vapours and particulates at up to 10 times the workplace exposure limit.
• Low profile design for better peripheral vision
• Adjustable head cradle and easy to fasten neck straps
• Soft, non-allergenic material with textured face seal
• Lightweight, well balanced design

3M

189-3493   4000+ Series Half-Type Half Mask

Blaze Welding Shield

• Auto-darkening filter that provides uniform shading across the entire viewing area
• The shields have five user-selectable dark shades from shades 8 to 12
• Three sensitivity settings
• Lightweight
• Versatile headband, designed to be adjusted with one hand

3M

705-8807   Welding Mask, 44 × 93mm Lens

3M E.A.R Reusable Yellow PVC Ear Plugs

• Non-invasive banded hearing protector
• Designed to fit in multiple positions; behind the neck, over the head and under the chin
• Smooth polyurethane pods for protection without insertion into the ear canal
• Secure and comfortable with an easily adjusted ball and socket joint

3M

562-261   28dB, 5 Pairs

3M PELTOR X4, 33dB Ear Defender and Headband

• High performance hearing protector for protection against high noise levels, whilst maintaining a sleek, low profile, aesthetically pleasing design

• Innovative sealing ring provide excellent acoustic protection particularly against sounds dominated by low frequencies

• Slim and lightweight compared to other high attenuating earmuffs

• Electrically insulated wire headband

• Twin headband design helps reduce heat buildup with good fit and balance

3M Peltor™

449-6499   35dB 3M PELTOR Optime III Ear Defender and Headband

3M™ SecureFit™ Safety Glasses

• 3M Pressure Diffusion Technology allows temples to naturally adjust to individual head sizes
• Self-adjusting feature eliminates need to stock multiple frame sizes at worksites
• Secure, snug fit keeps eyewear in place without slippage even when the person is in motion
• Anti-fog coating helps keep lenses free of moisture in hot and humid conditions

3M

789-7772   3M SecureFit SF200, Clear Eye Protection Anti-Mist

824-5425   3M SecureFit 400, Clear Safety Glasses Anti-Mist

136-3626   3M SecureFit 600, Clear Safety Glasses Anti-Mist

3M Cylindrical PUR Self Adhesive Feet, 19.1mm diameter x 4.1mm height

- Excellent skid resistance
- Non conductive
- Long aging resiliency – will not crack or harden
- Abrasion resistance
- • Resistance to marring and staining

203-2380   19.1mm diameter x 4.1mm height

3M Hemispherical PUR Self Adhesive Feet, 10.4mm diameter x 7.9mm height

- Excellent skid resistance
- Non conductive
- Long aging resiliency – will not crack or harden
- Abrasion resistance
- Resistance to marring and staining

192-2670   10.4mm diameter x 7.9mm height

RS PRO Rectangular Polymer Non Slip Pad, 16mm diameter x 3mm height

- Nitrile - Ideal for use with our range of levelling feet
- Nitrile benefits from a high co-efficient of friction and excellent resistance to most chemicals
- Withstands continuous temperature of -20°C to +70°C
- Dychem - Offers 'super high' non slip properties; absorbs shock and vibration; non-conductive; non-toxic; withstands temperatures from 0°C to +50°C

302-2974   16mm diameter x 3mm height

RS PRO Orange Safety Helmet

- CE certified
- Vented hard hat allowing a refreshing airflow around the head
- Lateral deformation
- 6 points textile harness
- Wheel ratchet size adjustment for easy fitting
- 7 years shelf life from manufacturing do outlined in product user sheet
- Chin strap included

161-8136   Ventilated

RS PRO UV Safety Glasses

- Clear lens, amber lens or smoke lens eye protection
- Polycarbonate
- Frameless
- Moulded nose bridge
- Brow Guard
- Soft rubber arms
- Comfortable
- Safe
- Stylish
- Anti-scratch lens

918-5737   Polycarbonate Lens

Mitsubishi FX5U - CPU Modules

- FX5U CPU base units with very fast processing time
- Versions with up to 256 inputs and outputs
- Expanded input/output area for networks and complex applications
- Can be upgraded by combining with expansion modules
- Built-in SD card slot
- Run/Stop/Reset switch
- Built-in Ethernet port, RS485
- Displays the input and output states via LEDs
- Integrated real-time clock
- Programming software GX Works3

MITSUBISHI ELECTRIC

875-5672	Mitsubishi FX5U PLC CPU
135-9275	Mitsubishi MELSEC iQ-F PLC CPU Computer Interface, 128 kB Program Capacity, 40 Inputs, 40 Outputs, 5 V dc, 24 V dc

Jumo Quantrol LC-Series - PID Controller

- 3 formats: 48´48mm, 48´96mm and 96´96mm
- Two seven-segment LED displays (red/green)
- The values can be displayed in °C or °F
- LED status indicator for the output
- Two-state/three-state and continuous controller (depending on version)
- Sensor monitoring
- Self-optimization (autotuning) for exact PID control
- Manual/automatic mode
- Configurable limit value monitoring (alarms)
- Setpoint changeover
- Level inhibit and key lock
- RS485 interface (Modbus RTU)
- Ramp and timer function
- Firing curve for pottery kilns
- Push-in controller insert
- Setup interface (USB Mini-B)
- USB-cable also available (stock-no. 815-8832)

JUMO

815-8829	Jumo QUANTROL PID Temperature Controller, 96 × 96mm, 2 Output Analogue, 20 → 30 V ac/dc Supply Voltage
815-8817	Jumo QUANTROL PID Temperature Controller, 96 × 96mm, 2 Output Analogue, 110 → 240 V ac Supply Voltage

West 6100+ Temperature Controller

- Dual setpoints with optional remote selection
- Plug in output modules allows installing just the functions needed
- Expanded user-selectable operator modes
- User-selectable plug-and-play output cards
- Process and loop alarms
- Adjustable hysteresis
- Optional analogue Remote Setpoint Input
- Optional 10 V SSR driver
- Improved Windows PC configuration software
- Improved easy to use HMI
- Jumperless input configuration
- Auto-hardware recognition
- Faster communication speeds
- More security options
- Backward compatible panel cut out, housing and terminal wiring capability

WEST Temperature Control Solutions

123-8241	West Instruments P6100+ DIN Rail PID Temperature Controller, 48 × 48mm 1 Input, 3 Output Relay
123-8239	West Instruments P6100+ DIN Rail PID Temperature Controller, 48 × 48mm 1 Input, 2 Output Relay
123-8240	West Instruments P6100+ DIN Rail PID Temperature Controller, 48 × 48mm 1 Input, 2 Output Relay, SSR

LASCAR electronics

Off the shelf hardware & intuitive design software
for rapid development of your next display project.

Lascar's PanelPilotACE range of touch screen graphic displays provides an excellent means of automating manufacturing processes in applications that require minimal or reduced human intervention. The net result is labour savings, lower energy & material costs and improvements to quality, accuracy and precision.

PanelPilot ACE

Software Solutions
Code-free development of advanced touch screen display applications

Design Studio includes a library of meters, buttons and switches. You can also create your own content by combining behaviour and graphical elements.

Hardware elements are dragged from the library into a function builder where associations with graphical elements (such as a needle on a meter) can be defined. Set scaling for analogue inputs, define alarm triggers and behaviours for digital I/O.

Product	Description	RS Part
SGD 43-A	4.3" Display with Analogue, Digital, PWM and Serial Interfaces	800-6712
SGD 70-A	7" Display with Analogue, Digital PWM, and Serial Interfaces	123-9655
SGD 43-A DK+	Development kit for SGD 43-A display	818-7354
SGD 70-A DK+	Development kit for SGD 70-A display	138-3528
S43-RS485	Add-on board allowing RS485 communication for the SGD 43-A	138-3525
S43-TP	Four-channel thermistor add-on board for the SGD 43-A	123-9656
S70-TP	Four-channel thermistor add-on board for the SGD 70-A	138-3527

PanelPilotACE Touchscreen Displays

From background images to text elements, analogue style meters, touch screen navigation, complex logic statements, PID control, serial communications, multi-channel data logging, Ethernet FTP for logged data transfer, trend graphs and maths functionality, PanelPilotACE Design Studio software allows users to build multi-screen interfaces without writing a line of code.

Hardware Solutions

4.3" & 7" displays with analogue, digital, PWM, serial interfaces, CAN bus and Ethernet for transmission of logged data via FTP

The SGD 43-A and SGD 70-A are the first in a range of PanelPilotACE compatible displays and panel meters designed specifically to run projects created in the PanelPilotACE Design Studio. Both feature capacitive touch screens and a wealth of hardware interfaces including four 16-bit bipolar analogue inputs, eight digital input/output pins, two alarm outputs, four PWM outputs, RS232 and RS485 comms, CAN bus and FTP transfer of logged data via wired Ethernet.

SGD 43-A ▼

▲ SGD 70-A

Development Kits

Get your project off the ground quickly with a choice of two development kits. No need to create your own wiring loom and test rig. SGD 43-A DK+ and SGD 70-A DK+ are the best choice if you are starting to develop on the PanelPilotACE platform.

They include all you need to begin: a PanelPilotACE display module, a development board and a USB cable. The board itself provides switches, dials, LEDs and screw terminal connections for all the input and output functionality of your PanelPilotACE.

PSENmag Non Contact Switches, Square

- Connected via a plug connection or with cable
- Flexible cable outlet, including connector, so there is no need for an angled connector
- Flexible mounting, both the sensor and the actuator support every conceivable mounting configuration
- Cost effective thanks to series connection
- Operating distance of 3 mm or 10 mm
- Extra signal contact and LED

PILZ
THE SPIRIT OF SAFETY

619-2818 PSENmag Magnetic Safety Switch, Plastic, 24 V dc

824-4918 PSENmag Magnetic Safety Switch, Plastic, 24 V dc

PNOZ X3 Series of Safety Relays by PILZ

- LED indicator statuses to support switching channel status between 1 or 2 signals & also for monitoring the supply voltage currently in the relay
- Semiconductor output signals: switch status channel 1 / 2
- 3 safety contacts and 1 auxiliary contact
- Several connection outputs & status indicators
- Your opening and closing of the safety function relays is tested automatically within each on-off cycle
- A monitored manual reset is available in this unit
- DIN rail mounting as standard

PILZ
THE SPIRIT OF SAFETY

245-1848 Pilz 24 V ac/dc Safety Relay Dual Channel With 3 Safety Contacts and 1 Auxilary Contact

F3S-TGR-CL Safety Light Curtain

- Simple to wire, mount and configure
- DIP-switch setup for blanking, interlock function, muting and optical coding
- Floating blanking and Fixed blanking supported
- Muting function and muting lamp integrated
- Type 2 or type 4 acc. EN61496-1
- EN ISO 13849-1 – ready
- Long range active/active system
- Sensing distance 0.2 to 6m (14 mm) and 0.2 to 14m (35 mm)

OMRON

757-7651 F3S-TGR-CL Light Curtain, Sender & Receiver, 2 Beams, 14mm Resolution

757-7655 F3S-TGR-CL Light Curtain, Sender & Receiver, 2 Beams, 14mm Resolution

757-7709 F3S-TGR-CL Light Curtain, Sender & Receiver, 2 Beams, 35mm Resolution

Schneider Electric Single or Dual Channel Safety Relay

- Provides 3 N/O safety relay outputs plus 1 solid state output PLC signalling
- Monitoring of start button or automatic starting
- 24Vdc option incorporated for each supply voltage version
- Compact 22.5mm housing

Schneider Electric

360-4346 Schneider Electric Configurable 24 V ac/dc Safety Relay Single or Dual Channel With 3 Safety Contacts

Rope Pull Switch - ZQ700 Series

- Thermoplastic enclosure
- One-side operation / wire up to 10 m long
- Release push button
- Position indicator
- Large wiring compartment
- Twisting of towing eye not possible
- Wire pull and breakage detection
- One tension force for cable lengths up to 10m
- 1 Cable entry M 20 × 1.5

SCHMERSAL

741-8675 ZQ700 Cable Switch, Straight, 10m, NO/3NC

741-8672 ZQ700 Cable Switch, Straight, 10m, 2NC

deTec4 Core Light Curtain Receiver

- Simple assembly with innovative mounting
- No blind zones
- Integrated LED display
- Resolution of 14 or 30 mm
- Protective field height of 300 mm to 2100 mm
- Automatic calibration on the protective field width up to 10 m range

SICK

136-3375 30mm Resolution

Telemecanique Sensors Photoelectric Sensor

- Four modes of detection in one unit
- Easy set-up at the touch of a button
- Self teach precise set-up 'multi-mode detection'
- Sensing distance dependent on mode of operation
- Through Beam Functionality using additional light source (thru-beam accessory)
- Programmable NO/NC switching
- Connection: pre-cabled or plug-in connector (M12 4 pin male)
- IP67 Protection rating
- Operating temperature range -15 → +55 °C

Telemecanique Sensors

444-3451 Telemecanique Sensors Diffuse, Retro-Reflective, Through Beam (Receiver) Photoelectric Sensor

377-7242 2P+E IP66 ATEX Approved Power Connector, Plug, 16A 240 V

377-7258 3P+E IP66 ATEX Approved Power Connector, Plug, 16A 415 V

Sick W9-3 I/O-Link Photoelectric Sensors

- Continuous threshold adaption (AutoAdapt)
- Single-lens autocollimation optics
- Simple setting either via teach-in pushbutton, cable or IO-Link
- PinPoint LED technology
- Flexible sensor settings, monitoring, advanced diagnostics, and visualization thanks to IO-Link

SICK

134-7796 Sick Through Beam (Emitter and Receiver) Photoelectric Sensor 0 → 60 m Detection Range PNP IO-Link

Universal coders with hollow axis, Ø 58, type GI333

- The coder can be powered by a wide supply range of between 4.75 and 30 Vdc.
- Universal output stage, compatible with Totem pole, NPN or PNP and RS422 or TTL line transmitter.
- Resolution up to 5000 pulses / turn.

Baumer
Passion for Sensors

481-7262 Baumer Universal Encoder

Ultrasonic Barrel-Style Proximity Sensor

- Provide reliable detection results where optical sensors reach their limits. The high measurement accuracy provided by internal temperature compensation, along with colour-independent object detection and immunity to contamination all ensure reliable operation, even under the most challenging conditions.

SICK

700-2889 M30 x 1.5, 200 → 1300 mm Detection, PNP Output, 9 → 30 V

Sick Background Suppression Photoelectric Sensor Block Sensor

- Reliable detection and very precise leading edge detection thanks to the small and homogeneous light spot of the PinPoint LED
- OptoFilter protects from operational interruptions caused by LED illumination or background reflections, e.g. from safety ve
- Free choice of sensor adjustment: Intuitively, quickly and precisely on the housing via the Teach-Turn adjustment or via IO-Link with pushbutton lock for preventing manipulation
- Enormous simplification when aligning the light beam to the object thanks to the PinPoint LED
- The Smart Sensor makes machine processes quicker, more efficient and transparent

SICK

180-6355 10 mm → 1.6 m Detection Range

ifm electronic Relative Pressure Sensor for Fluid

- IO-Link communication
- Independent set and reset points
- Visualisation of the switching states by clearly visible LEDs
- Signal damping, output delay on and delay off times
- High overload protection
- Highly stable ceramic measuring element is tolerant of overpressures
- Low zero offset or drift from ageing, overpressure or temperature
- IP 67

ifm electronic

125-1268 250bar Max Pressure Reading, 2× PNP/NPN-NO/NC

S3000 Laser Scanner

- Simultaneous monitoring of 2 protection fields possible
- Modular concept allowing for expanding the systems
- Easy to install and easy to service
- Certified for vertical use for access control or entry/ exit applications, as well as hand protection
- The selectable resolution makes it possible to adapt the devices
- to a very wide range of application requirements
- Formation of host/guest system

SICK

271-568 49m Max Range

Sick Background Suppression Distance Sensor Block Sensor

· Very high linearity measurement accuracy of up to ± 0.5 mm
· Accurate non-contact distance measurement up to 1 m
· Scaleable analogue and switching output
· Reliable operation on all materials
· Display with easy to use setup menu
· Red laser light, (class 2, eye-safe and high visibility)

SICK

219-027 100 mm → 300 mm Detection Range

Pepperl + Fuchs M18 × 1 Inductive Proximity Sensor

- Teflon coated brass housing. PPS sensing face. Carbonyl steel core
- LED indication
- Embeddable
- NO contacts
- IP67
- Operating temperature range -25 to +70°C
- No load current 15mA
- EN60947-5-2

PEPPERL+FUCHS

257-2490 Barrel, PNP Output, 5 mm Detection, IP67

Inductive Proximity Sensor - Barrel, PNP Output

- Nickel plated brass housing with PBT face
- LED indication
- Embeddable, flush or non-flush installation available
- IP67
- Supply voltage 10 to 30Vdc
- Short circuit and reverse polarity protection
- Pre-wired types have 2m PVC cable
- Plug-in types have M12 type connector

PEPPERL+FUCHS

239-7451 M12, 2mm Detection

Magnetic Cylinder Sensor Pneumatic

- Can be used in all standard cylinders, linear slides, and grippers using the C-slot and – with the help of adapters – in round rod, tie-rod, and profile cylinders
- Drop-in mounting from above simplifies handling and assembly
- Easy adjustment of two switching points via teach-in pushbutton
- LEDs for indicating the two switching points
- Detection range up to 50 mm stroke

SICK

212-8668 IP67, 15 → 30V dc

Inductive Proximity Sensor

- Has a metal housing with duroplast sensing face providing high impact and thermal resistance
- Adjustable sensing head, 5 positions
- M12 connector termination. Supplied with 2m PUR single-ended, straight connector lead
- 3 wire dc
- Yellow LED output status display
- Green LED for power on, flashing indicates a short circuit
- Mounting bracket included

TURCK

405-7167 20 mm Detection, IP67

Through Beam Photoelectric Sensor

- Visible red light
- Optimised for the detection of small parts
- Sturdy aluminium housing
- Sensitivity adjuster and light/dark switch as standard features of this series
- High switching frequency
- Supply Voltage 10 to 30 Vdc
- M8 Connector, 3-pin
- Protection degree IP67

PEPPERL+FUCHS

44-7147 30 mm Detection Range

Haptic and acoustic performance: Switches at the heart of the automotive industry
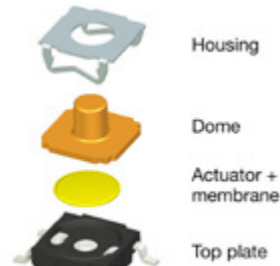
In the past, the electrical items used in automobiles were mainly lights, heaters and wipers that were activated with relatively simple switches, most of them toggles that could be sourced from a few manufacturers. The interior of these classic autos was simple yet functional.

Recently, the trend has been to include more complex features (such as infotainment) and the aesthetics and ergonomics of interior controls became more important in the switch selection, mainly through the layout of the various controls. Manufacturers are focusing on the look and feel of the passenger cabin and searching for ways to differentiate their offerings in an increasingly competitive business.

As a result, the design process for automotive interiors and controls now revolves around haptics, defined as the science and physiology of the human sense of touch, and acoustics, defined as the science of audible sound perception. The brand identity of a vehicle and its position within the range of automobiles from a manufacturer is characterized by the look, feel and sound, and these key elements mainly rely on the switch quality.

From robust pushbutton or toggle switches with relatively long travel, automotive interior subsystems and user preferences have evolved to more modern switches, such as smaller tactile switches with much shorter travel (less than 0.8 mm). With the increase of switches in the dashboard, smaller switches are required to fit within the available space. Many of today's drivers perceive old-style "long-travel" switches to be of inferior quality because they are familiar with the interface of portable devices such as smartphones. Short-travel switches are

usually based on a metallic "snap" dome contact system that interfaces between the actuator and the switch housing.
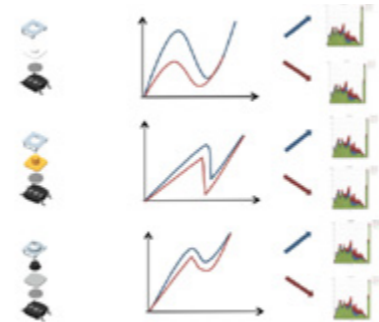

Exploded view of a tactile switch housing

Nowadays, automotive manufacturers and their suppliers producing subsystems such as switch panels often produce detailed specifications for the haptic and acoustic performance of the switches they select to ensure that they meet the brand identity as well as delivering consistency over time. For switch manufacturers, delivering correct and consistent acoustic performance to produce a sound and feel that match the required perception of brand quality desired by the automaker is the biggest challenge.

Several elements enter into the composition of a tactile switch and define the sound it makes. For example, the dome material and composition, structure and design of the switch body, and how the switch fits into the larger system impact the final product. So tuning switches can be a bit of an art, and requires experience to deliver the correct results.

Characterizing the acoustics of any switch usually involves measuring the audible spectral components of the sound made, using an accurate sound meter in a carefully controlled environment. The spectral distribution describes the sound's "color" and clearly differentiates between the two distinct sounds generated by the switch's actuation and release.

Examples of sound's color with 3 different tactile switches

Every component of the switch structure has an impact on the sound of the switch and must be carefully considered and tweaked to deliver the required sound spectrum. Embedding the switch in a printed circuit board can also change the sound of the switch, as can fitting the sub-assembly into the vehicle, so switch manufacturers have to work in close coordination with the vehicle manufacturer to ensure that the switch performs as desired in the vehicle.

C&K, a leading manufacturer of high-quality electromechanical switches, has extensive experience in customizing short-travel tactile switches such as the KSC series, and has an extremely wide range of components to draw upon. C&K has also invested in a state-of-the-art anechoic chamber with accurate sound evaluation that enables evaluation of individual switches and customer sub-assemblies. It offers reliable and high-performance switches with just the right sound and feel.

C&K's KSC4 tactile switch series and C&K's SAM series for seat adjustment systems

---

Schneider Electric LC1D TeSys D Contactors

• Built-in auxiliary contacts for added switching capability
• Screw connections: IP20 finger-safe terminals with both North American and International terminal markings
• Can be panel mounted with screws or DIN Rail mounted

Schneider Electric

394-9807 Schneider Electric Tesys D LC1D 3 Pole Contactor, 3NO, 9 A, 4 kW, 24 V dc Coil
400-1495 Schneider Electric Tesys D LC1D 3 Pole Contactor, 3NO, 9 A, 4 kW, 110 V ac Coil
394-9790 Schneider Electric Tesys D LC1D 3 Pole Contactor, 3NO, 9 A, 4 kW, 230 V ac Coil

RS Pro Boxed Isolators

• Interlocking lid ensures removal in the OFF position only
• Easy access and switch removal
• Padlockable handles
• Flame retardant material
• Maximum voltage 750V
• ABS, metal clad, diecast and stainless steel versions available

RS PRO

466-172 3 Pole DIN Rail Non Fused Isolator Switch, 32 A, 11 kW, IP65

Schneider Electric Flush Red - Momentary, Harmony XB4 Series

• 40mm diameter
• Metal push button
• Red in colour
• IP66, IP69K rated

Schneider Electric

330-9035 22MM

Siemens SIRIUS ACT Emergency Stop Push Button Panel Mount

• 1NO/2NC contact configuration
• Rotate to unlatch reset method
• Panel mount with cut-out diameter of 22mm
• Comes with protective collar
• Enclosure top part yellow with a protective collar
• 1×M20 each on top and bottom for metric screw connections

SIEMENS

1736-856 1NO/2NC

Siemens Push Button for use with 3SU1

• Two-hand operation console for command devices
• 22 mm
• Enclosure material plastic, enclosure top part grey, 3 control points plastic
• 8 additional reference holes for 22 mm command devices 2 mushroom pushbuttons black 40 mm
• Front mounting, with cable cut-outs for metric screw connections

SIEMENS

183-7300 24 V ac/dc

High Capacity AEV Series Automotive Relays

• Capsule contact mechanism charged with Hydrogen gas
• Compact and lightweight
• High contact reliability
• Dustproof and waterproof

Panasonic

699-5503 Panasonic SPNO Automotive Relay Flange Mount, 24V dc Coil, 300 A

High Current Relay 150

• High current automotive relay 150A
• M6 screw terminal load connections
• Heat, moisture and vibration resistant
• Minimal contact resistance
• Ambient temperature - 40 to +125°C
• Dimensions: W84 × D40 × H45mm

TE

763-1468 TE Connectivity SPNO Automotive Relay Chassis Mount, 24V dc Coil, 300 A

Siemens Sounder Module Siren

• Modular Installation
• Compact design
• Rugged reliable construction
• Shock and vibration resistant
• Adjustable acoustic elements
• IP65 Rated
• 102 dB output

TE

181-1643 24 V ac/dc

Electronic Relative Pressure Switch for Gas, Liquid

- Electronic pressure monitor PK75
- Quick disconnect
- Process connection G1/4 A / M25 I
- 2 switching outputs
- Electrical design: DC PNP
- Output: 2 normally open
- Switching status 2×LED (yellow)
- Non latching short circuit protection
- Overload and reverse polarity protection
- Operating temperature: -25 → 80 °C
- IP rating: IP67

739-6721   10bar Max Pressure Reading, PNP-2NO

SIRIUS ACT Selector Switch

- Self-holding function of the actuator when mounting
- Twist prevention integrated into patented holder design
- Stackable contact modules
- One-handed installation
- Suitable for use in extreme environments
- No special tools required
- Simple geometry for mounting holes

135-5634   2 Position, Momentary, 22mm cutout

Key Switch Complete Units

- Easy installation
- Suitable for use in extreme environments
- No special tools required
- Simple geometry for mounting holes

SIEMENS

135-5657   2 mm Cutout Diameter

Schneider Electric TeSys Auxiliary Contact Block

- Low consumption on your control circuit
- 30 Mcycles of mechanical durability
- Compact, lightweight and easily attached to compatible contactors. Front side mounting
- Simplified mounting directly to the contactor/circuit breaker
- 1 carry case

Schneider Electric

394-9936   (-) 1NC + 1NO, 2 Contact, Front Mount, 10 A

Murrelektronik Limited Optocoupler

- DIN Rail mounting
- Compact, 6.2 mm width
- Made to last
- No mechanical wear
- Silent operation

MURR ELEKTRONIK

918-6995   Max. Forward 5 (Off) V dc, 53 (On) V dc, Max. Input 6 mA, 78mm Length, DIN Rail

3 Pole Panel Mount Non Fused Isolator Switch

- Main and emergency stop switch
- Handle available in black or red/yellow (emergency stop)
- Accepts 3 padlocks
- Front panel seal IP65
- Side feed with cover
- Screw or DIN rail assembly

SIEMENS

518-7398   100 A Maximum Current, 37 kW Power Rating, IP65

Sirius Innovation Motor Protection Circuit Breaker

- Circuit-breaker for motor protection
- Screw connection/ Spring clamp
- Class 10
- Impulse voltage resistance 6 kV
- Insulation voltage 690V
- Real power only 6/7W
- Standard switching capacity
- Approvals: CE / UL / CSA

SIEMENS

706-1762   0.9 → 1.25 A

SITOP PSU8600 Switch Mode DIN Rail Power Supply

- Multiple integrated outputs with selective monitoring
- Individually configurable outputs
- Compensation for power losses can be set separately for each output
- Narrow width without lateral installation clearances
- High efficiency
- Reliable operation
- Two integrated Ethernet/PROFINET ports
- TIA requires less time and reduces cost

SIEMENS

885-6094   400 → 500V ac Input, 24V dc Output, 10A 960W

Siemens Overload Relay

- Switch position indicator and test function
- STOP button
- Selector switch for manual/automatic reset
- Screw connection or Spring-clamp versions
- Impulse voltage resistance 6 kV

SIEMENS

122-9510   (-) 1NO + 1NC, 32 A F.L.C, 3 A Contact Rating, 3P, Sirius Innovation

Siemens, 40A Instantaneous RCD

- Residual current operated circuit breaker for personnel and fire protection
- Instant tripping, surge current withstand capability >1kA
- DIN rail mounting
- Equipment life span: >10,000 switching cycles
- Enclosure: IP20

SIEMENS

124-7721   RS PRO 3.5m Battery Jump Lead, 220A

Petzl Head Torch

- The Siemens Sematic ET 200SP, bus adapter BA 2×RJ45, 2 RJ45 sockets for PROFINET has dimensions of 20mm x 69.5mm x 59mm

SIEMENS

203-4113   Siemens - Adapter for use with PROFINET

Siemens 6ES7518 PLC CPU

- The Siemens 6ES7518-4FP00-0AB0 is a SIMATIC S7-1500F, CPU 1518F-4 PN/DP, Central processing unit with work memory 6 MB for program and 20 MB for data
- 1st interface: PROFINET IRT with 2-port switch, 2nd interface: PROFINET RT, 3rd interface

SIEMENS

211-9069   For Use With SIMATIC S7-1500F, RJ45 Connector (Ethernet Communication) Interface

Siemens - Power Supply for use with SIMATIC S7-400

- Rated input voltage 120/230 VDC
- Mains/voltage failure stored energy time 20 ms
- Rated output voltage 5/24 VDC
- Design of electrical connection 3× 1.5 mm², solid or stranded wire with end sleeve, external diameter 3 mm to 9 mm

SIEMENS

226-3974   SIMATIC S7-400 Series, S7-400

Weller®

Powering 2 tools at once, the multifunctional **WT** 2M

High flexibility for versatile applications - 2 channel station with 150 W

Front-mounted power switch
Convenient on/off control

BACKWARDS COMPATIBLE
With Weller's existing passive tip tools for low cost of ownership

MICRO TOOLS
Compatible with micro soldering cartridge tip tools (active tips) for highest performance

Stackable units
The WT Line soldering stations can be stacked on the WTHA 1 hot air station saving space on the workbench

Multifunctional LCD screen
> Detailed overview of all functions
> Adjustable background illumination
> Power bar graph shows power output from the station to the soldering iron tip
> Supervise tool status and performance of both channels

Menu buttons
> Intuitive navigation
> Simple operation of the various features of the power unit

Tooless, quick tip change
> Active tip (cartridge) system allows quick, convenient change of entire tip when iron is hot
> No extra tools required to facilitate the end user's day to day work.

DUAL POWER
Supports two tools with up to 150 W combined power

GENUINE Weller Approved tip quality

Weller®

WSR
2-IN-1 SAFETY REST
WSR 203 - 176-3374
WSR 206 - 176-3376

WT 1
90 W SOLDERING STATION
WT 1010 SET - 122-7916
WT 1012 SET - 122-7917

WT2M
150 W SOLDERING STATION
176-3371

WT2010M
150W SOLDERING STATION & IRON
176-3372

WTHA 1
900 W HOT AIR STATION
122-7920

RS

RS PRO Insulated Ring Terminal
• Copper body material for high conductivity and easy crimping
• Tin plating for resistance to corrosion, added strength and excellent conductivity
• Double crimp design with an internal copper sleeve for added strength and robust crimp joint
• Durable nylon insulation provides electrical insulation, terminal protection and resistance to abrasion, impact and fatigue

RS PRO

267-3745   1.5mm² to 2.5mm² Wire Size

Bench ESD-Safe Mat
• ESD bench mat
• Manufactured from rubber
• Supplied with 10 mm stud
• Solder Iron resistant
• Easy to clean
• Low reflecting

RS PRO

787-3114   1.2m x 600mm x 2mm

Phoenix Contact D Sub Adapter
• From Phoenix Contact, a range of D-Sub gender changers
• The D-sub adapters in this series have yellow chromate steel housings and copper alloy contacts
• The gender changers are straight in orientation and are available in 9, 15, and 25 way male and female options
• All connectors in this range have 4-40 UNC threads
• They have excellent reliability and a high capacity

PHOENIX CONTACT

111-6137   Male 9 Way
111-6160   Female 9 Way

Molex MINI-FIT Series Crimp Terminal
• Multiple points of contact for reliable electrical connection
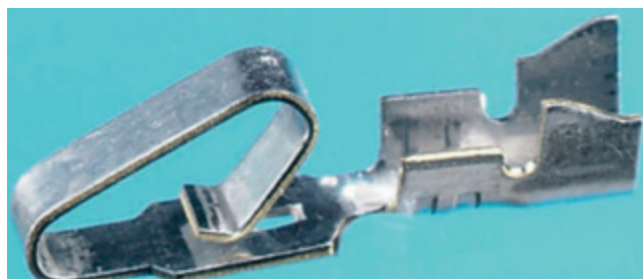• Locking tangs for secure connection in housing
• Range of platings and wire

molex

172-9140   Male

Molex Crimp Terminal Contact

- KK 254 2759 Series crimp terminal contacts are for use with KK 2695 Series housings and KK 5051 Series housings on 22-30 AWG conductors
- Suitable for use in a range of applications these connectors are robust and reliable for assurance when used in your design

molex

172-9178 Female

Binder Cable Mount Connector, 5 Contacts, Miniature Connector

- From Binder, a selection of M16 straight plugs and sockets designed for cable mounting
- The 680 series of miniature circular connectors have a screw locking mechanism according to IEC 130-9
- An internal bend protection sleeve and strain relief offer maximum cable retention
- With a standard contact layout, the 680 series of miniature circular connectors ensure compatibility with other circular DIN style connectors

binder

129-8854 Male and Female

Type F - German Schuko 5 Gang Power Distribution Unit

- Overvoltage protected trailing socket
- Optical trip signal (also, after an over voltage trip condition, the connected device will return to operation if it was switched-on when the over-voltage was detected by the socket strip
- 5 Schuko sockets
- 2-Pin switch with red illumination
- Socket spacing: 64mm
- Increased touch protection
- Supplied with a 1.5 metre power cord terminated with a Schuko plug
- Spare fulse included
- Suitable for floor or wall mounting

EHMANN

652-0386 250 V

Carbon Film Resistor

- A comprehensive range of high stability carbon film resistors qualified and tested to the requirements of IEC 115 and IEC 115-2
- The ruggedised welded cap and lead method of manufacture provides a considerable strength and resistance to damage
- The coating materials and the colour bands are epoxy resin and are highly resistant to solvents, abrasion and chipping. Improvements in materials and processing have allowed the rated power to be improved.

RS PRO

707-7678 1.2kΩ

RS PRO Cable Sleeve Kit

- From RS PRO a portable heat shrink kit consisting of a range of 170 assorted high-quality heat shrink tubing
- The tubing contained in this versatile kit is in a range of colours and diameters to suit a range of different applications
- The box itself is made from plastic with compartments inside for the different heat shrink tubing sizes and has a carrying handle on the top
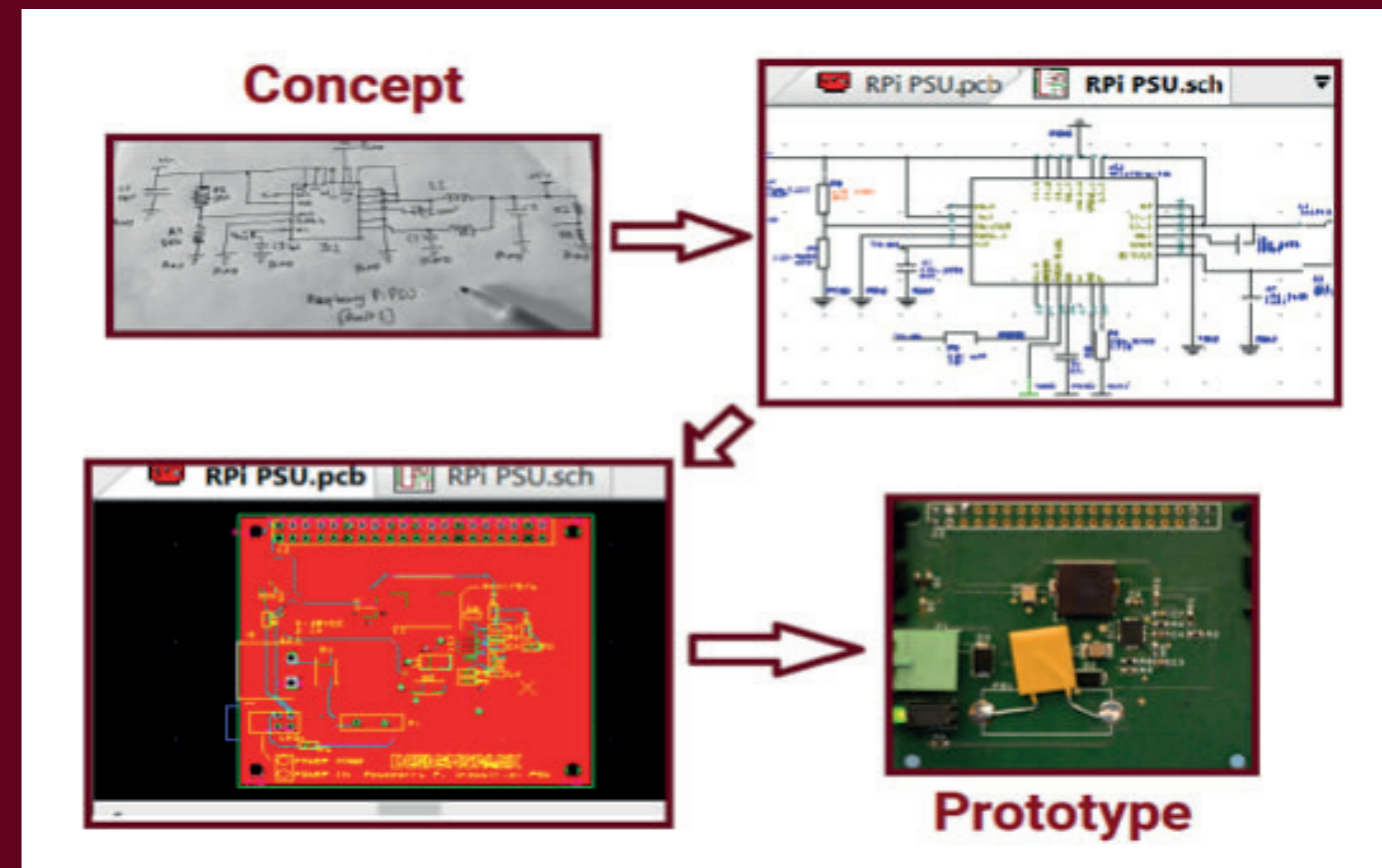
RS PRO

397-679 2:1, 3:1 Shrink Ratio

RS DS

DesignSpark PCB

Go from concept sketch to prototype, and further

■ Choose DesignSpark PCB for your circuit board design needs, as it has the right set of tools to help you save time, money and prevent errors.

■ Start your prototyping journey with our free-of-charge software, and upgrade anytime to our Creator or Engineer paid subscription plans for advanced features

www.rs-online.com/designspark/pcb-software

RS

Modified Sine Wave, 100W to 5000W, Universal UK/Euro Output Sockets with USB

- Universal UK/Euro output Socket • ON/OFF switch control the inverter by hand
- Anodized aluminium case provides durability & max heat dissipation
- Two LED indicators on the front panel shows the working and failure state
- The inverter is compact, lightweight and easy to operate
- Over voltage, Overload, over temperature, short circuit, reverse Polarity protection
- Low voltage alarm & shutdown
- Auto. reset after being in protected
- Soft Start

RS PRO

816-0068   1000W Fixed Installation DC-AC Power Inverter, 12V dc / 230V ac

Blade Automotive Fuses

- Equivalent to ATO and ATC fuses
- Voltage rating of 32Vdc
- Used for low voltage applications

RS PRO

563-762	RS PRO 20A Yellow Car Fuse, 32V
563-750	RS PRO 15A Blue Car Fuse, 32V
563-740	RS PRO 3A Violet Car Fuse, 32V
563-778	RS PRO 5A Tan Car Fuse, 32V
563-744	RS PRO 10A Red Car Fuse, 32V

RS PRO Plug Connector

- Prewired plug to bare ended, coiled or flat leads which incorporate either a universal or safety plug, the safety plug having a intergrated 8A fuse.
- Cable: 2 × 0.75mm2

RS PRO

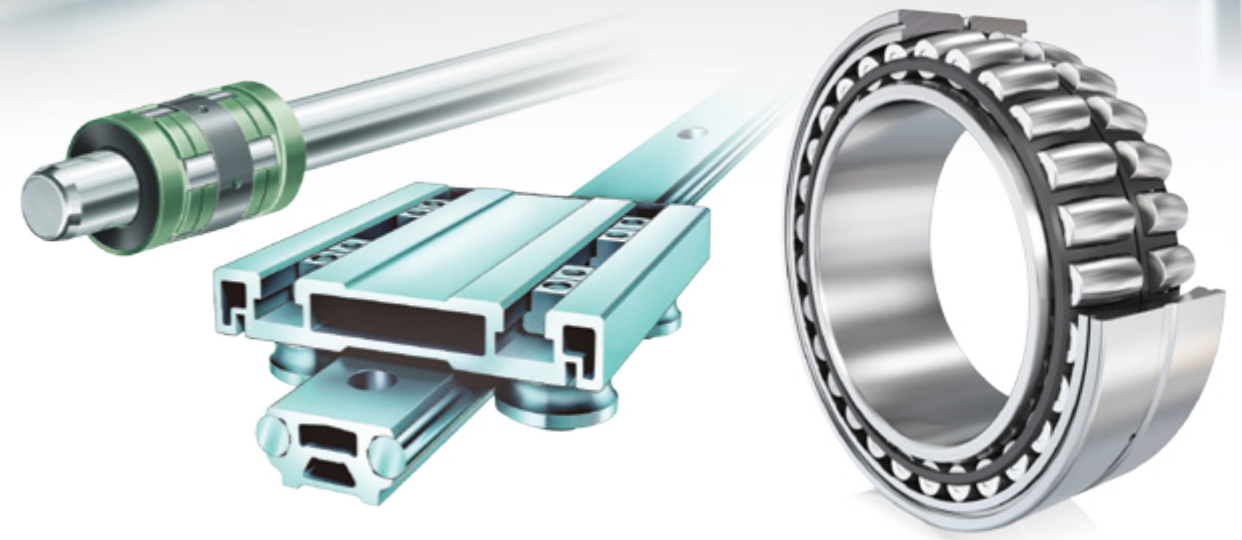**156-4088**   RS PRO Plug Connector

RS PRO, 1.6A Glass Cartridge Fuse

- Fast-acting fuses, size 5 × 20 mm
- Glass body, nickel-plated brass ends
- UL; VDE; SEMKO; BEAB; DIN 4166; IEC 127-2/II and EN 60127-2/II

RS PRO

610-9670   5 × 20mm

Mobility for Tomorrow

Future trends are clear - increasingly intelligent bearings and mechatronics systems require the **Products** and **Maintenance Management** solutions of Tomorrow.

Yet Schaeffler provides those revolutionary solutions Today ...

Products which are ever-more efficient, safer and quieter; keeping pace with the demands of heavy industry, renewable energy, automotive and rail transport applications.

And **Condition Monitoring** which remotely evaluates real-load data to extend maintenance intervals safely leading to greater cost savings.

Mobility for Tomorrow ... it's here today

SCHAEFFLER

SKF Self Aligning Ball Bearing

- These bearings are designed to accommodate shaft deflection when running and will also cope with initial misalignment
- The double row bearing is designed primarily to withstand radial load with a small capacity for axial load. Also available with ring seals (rubbing seals) made from oil-resistant, non-wearing synthetic rubber with steel reinforcement on both sides (Type 2RS1)

SKF

505-794   Plain Race Type

LAG Fixed Castor Wheel

- Black, non-marking rubber tyre
- Electro-zinc plated white passivate pressed steel frame
- RoHS compliant
- Roller hub bearing
- Hardness: 85 ±5, Shore A
- Wheel series

LAG

694-8731   230kg Load

RS PRO Countersunk Head

- Excellent corrosion resistance
- Versatile in the number of joints they can fasten
- Features a stainless steel finish
- Metric thread
- Recyclable
- Can be used up to 800°C
- A2 grade 18/8 stainless steel type (304 S15)

RS PRO

914-1649   6mm

Ewellix Makers in Motion Bearing

- Closed ball bushings and plain bearings for XY positioning, pick and place applications and precision linear motion systems
- Plain bearings to be used in heavy shock, vibration, high acceleration or high speed situations which are unsuitable for linear ball bearings

EWELLIX

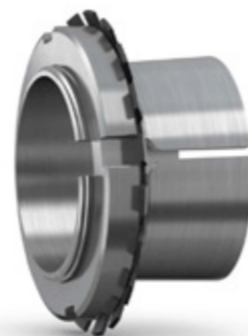**284-9093**   19mm

NSK Deep Groove Ball Bearing

- Accepts radial and axial loads
- 2RS denotes bearing fitted with 2 synthetic rubber seals
- DDU & DD denotes bearing fitted with 2 contact synthetic rubber seals

NSK

492-1923   25mm I.D, 37mm O.D

SKF Bearing Adapter Sleeve

- This handy piece of kit handles the task of seating the bearing securely. To complete the job, it comes with a KM lock nut and an MB lock washer, so you can be sure of a tight fit.

SKF

506-595   H 3130

RS Pro Pulleys for XPA, SPA & A Belts

- Suitable for use on drives for belt speeds of up to 40 metres per second
- Compatible with all manufactured V & Wedge Belts, designed to be used with appropriate Taper Bushes
- All conform to ISO 4183.

RS PRO

184-038	Pulley 155.5mm Outside Diameter, 150mm Pitch Diameter , 50mm Bore
184-432	Pulley 155.5mm Outside Diameter, 150mm Pitch Diameter , 42mm Bore
184-066	Pulley 130.5mm Outside Diameter, 125mm Pitch Diameter , 42mm Bore

British Standard Simplex Chain

- Witra, a range of chains from Wippermann
- Proof loaded after assembly
- Solid rollers
- Supplied in 5 m (16.4 ft) lengths plus connector
- Manufactured in accordance with BS228, R606 and DIN8187

Witra *... proof of Quality*

612-5054	Witra 05B-1 Steel Roller Chain, Simplex Strands, 5m Long , 8mm Pitch
612-5127	Witra 16B-1 Steel Roller Chain, Simplex Strands, 5m Long , 25.4mm Pitch

Two-Bolt Pillow Block - Normal Duty

- Two-Bolt Cast Iron Pillow Blocks are cost-effective bearing solutions where ease of maintenance is of primary importance
- Pedestal-mounted bearing housings

RS PRO

750-8946	Pillow Block Bearing 20mm ID
750-8936	Pillow Block Bearing 15mm ID
750-9012	Pillow Block Bearing 30mm ID

High Capacity Wedge Belts SK S=C PLUS

- The belt transmits more power than a typical V-belt with a comparable top width.
- The SK wedge belt has a space saving shape and delivers high performance and efficiency (approx. 97%).
- Ideal for use in heavy mechanical engineering with high load requirements.
- Wrapped wedge belts according to DIN/ISO/BS • High performance
- Compact
- Low maintenance costs
- Sections: SPZ, SPA, SPB, SPC

optibelt

144-8879	SK Series Drive Belt, belt section SPA, 850mm Length
144-8886	SK Series Drive Belt, belt section SPA, 1.582m Length
144-8890	SK Series Drive Belt, belt section SPA, 1.957m Length
144-8892	SK Series Drive Belt, belt section SPA, 2.057m Length

BT 100 Series Motorised Drive Rollers

- Roller with integral motor
- M8 threaded spindles (bolt/bracket supplied)
- Grooved to provide drive to nine slave rollers
- Bush type motor
- Quiet running with a noise level of approx. 47 dB(A)
- Service life of approx. 6000 operating hours (effective running time)
- 15 starts/stops per minute
- Motor Voltage Range: 16 - 28 Vdc
- Gear Ratio: 21

INTERROLL

437-2804   Interroll M8 Motorised Drive Roller, 50mm x 300mm

British Standard Pilot Bored Sprockets

- Manufactured to BS228/13 from steel with black passivated finish
- Easily re-bored as required

RS PRO

146-5431	RS PRO 11 Tooth Pilot Sprocket
182-880	RS PRO 13 Tooth Pilot Sprocket
183-142	RS PRO 15 Tooth Pilot Sprocket
182-896	RS PRO 16 Tooth Pilot Sprocket
183-697	RS PRO 23 Tooth Pilot Sprocket

RS DESIGNSPARK

GOOD MINDS THINK. GREAT ONES SHARE.

We connect a world of curious minds from all walks of life.

Our community of over 1.3 million members include students and educators, makers and hobbyists, start-ups, professional engineers and tech suppliers who use our design resources to fire up the ordinary and ignite the extraordinary.

The DesignSpark vision is to educate, influence, promote and practise engineering responsibility and sustainability, so creators and enablers can make a positive impact for a better world.

#ActivistEngineering

DESIGNSPARK MEMBERS CAN ACCESS ALL THIS

PROFESSIONAL DESIGN SOFTWARE TOOLS

EXPERT ARTICLES & TECH UPDATES

LEARNING

CAD TOOLS & MODEL LIBRARIES

INSPIRATION, PROJECTS & COMPETITIONS

COMMUNITY COLLABORATION

MakerBot Replicator Z18 5th Gen 3D Printer

- Seamlessly integrated with the MakerBot 3D Printing Experience, a growing collection of hardware, software, materials, accessories, and solutions
- Wi-Fi, USB cable, USB stick, and Ethernet connectivity ensures a seamless production workflow
- App and cloud-enabled for connecting to MakerBot Print, MakerBot Mobile, and Thingiverse (app available for Android and iOS operated devices)
- Onboard camera and diagnostics

845-9558

Ultimaker 3D Printer Bundles

- 3D Printer
- 3× spools of Ultimaker material
- Easy remote 3D printing and monitoring
- Unlimited secure project storage in the cloud
- Enterprise-grade software and user management
- Role-specific e-learning courses taught by experts

Ultimaker

233-7543	2+ Connect
233-7544	S3
233-7545	S5
233-7543	2+ Connect

RS PRO WT280× 3D Printer

- RS PRO introduces the 3D Printer that has been specifically designed to be 3-5 times faster than the normal desktop 3D printers
- With a speed of up to 450 mm/s this RS PRO 3D Printer can be used in a variety of different environments to cut down on printing speed that has been a long term pain point in the history of 3D printing whilst also keeping the accuracy
- The RS PRO 3D printer features dedicated high strength PLA for a lower melting point for even more speedV

202-7268 Mykal Industries 67290 Pressure Washer Cleaner for Spray Wash Equipment

RS PRO 3D Printer Filament

- Material is very light and durable which makes ABS particularly suitable for tools, toys and all kinds of utensils
- Minimal warping
- Reliable bed adhesion
- Highly durable and more flexible than PLA
- Offers good heat resistance and smooth finish

832-0327	Red
832-0311	Black
832-0315	White
832-0337	Silver

Ultimaker Tough PLA 3D Printer Filament

- Impact strength similar to ABS, greater than regular PLA
- Higher stiffness compared with ABS
- Less brittle than regular PLA
- Gives a more matte surface finish quality than our normal PLA
- Suitable for post-processing with improved machinability compared to regular PLA
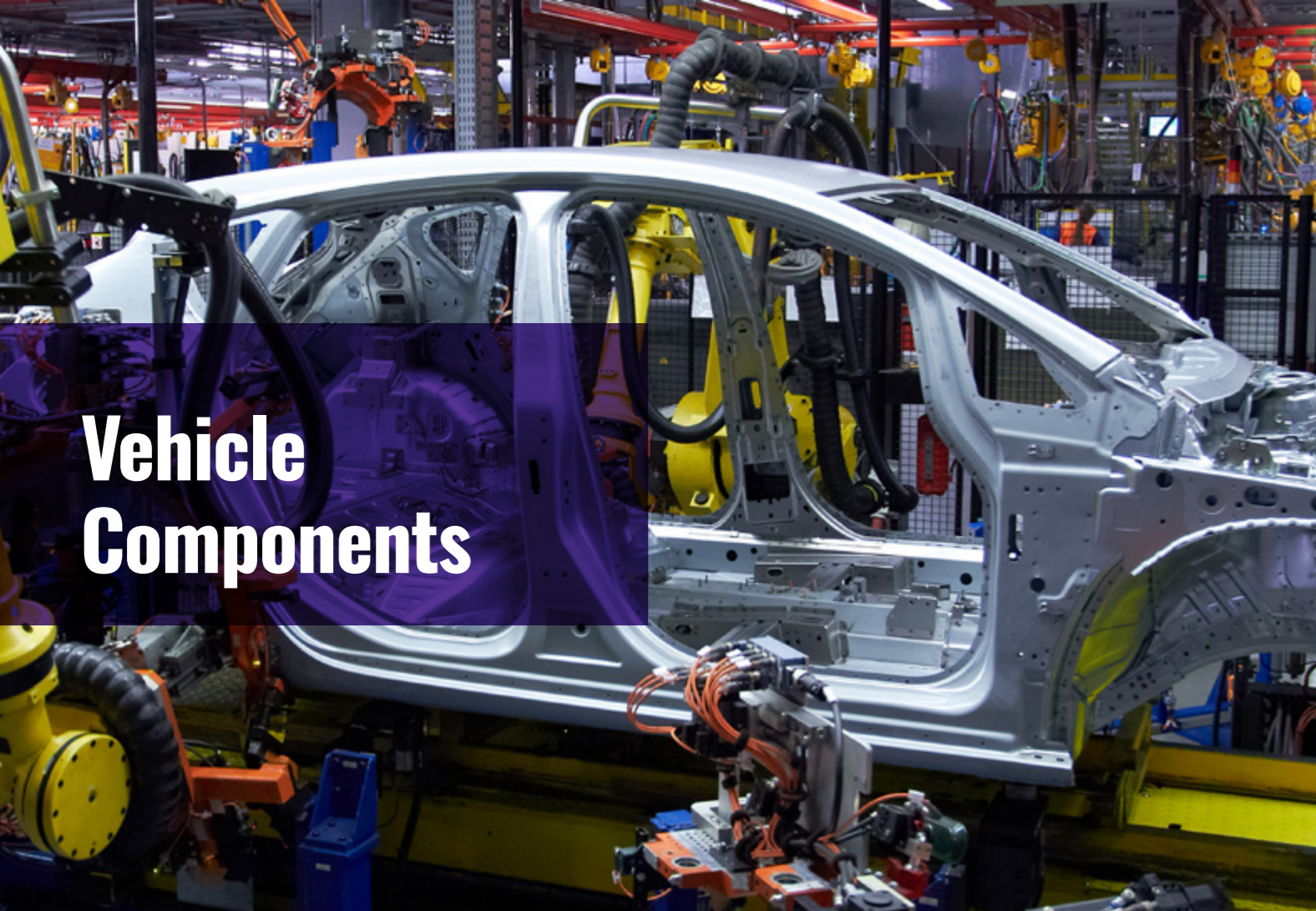
Ultimaker

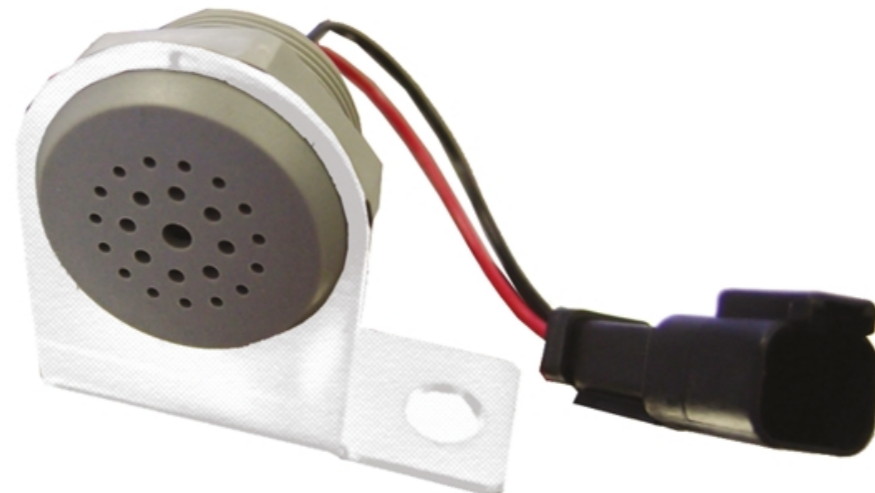|	
181-4126	Black
181-4127	White
181-4128	Red
181-4129	Green

Vehicle Components

Round Piezo electric vehicle buzzer

• Round panel mounting buzzer designed for automotive use
• High output levels
• Internal circuitry for dc operation

sonitron

805-5238
805-5229

12 & 24V Vehicle Lamps

• Lamps with metal bases for cars

OSRAM

579-152   BA15s Base Clear Incandescent Car Lamps 12 V, 21 W

Car Lamps

• OEM Quality
• Wide product range
• Reliable quality
• Number plate and side position lights
• Interior lighting and reading lights

OSRAM

579-219	SV8.5-8 Base Clear Incandescent Car Lamps 12 V, 10 W
170-907	SV8.5-8 Base Clear Incandescent Car Lamps 24 V, 5 W
170-913	SV8.5-8 Base Clear Incandescent Car Lamps 24 V, 10 W
579-203	SV8.5-8 Base Clear Incandescent Car Lamps 12 V, 5 W

Osram PARATHOM DIM PAR16 Dimmable LED Reflector Lamp, GU10, 2700K with Retrofit Pin Base

• LED retrofit lamp for vehicle interiors
• PARATHOM DIM PAR16 LED Reflector bulb
• Low energy consumption (4 kWh/1000h)
• Excellent light quality
• High colour rendering (narrow binning)
• Low maintenance
• Single optic design
• Alternative to high voltage Halogen lamps
• Compact design (full glass)
• Rated 3.7 W

OSRAM

191-7714

Osram Automotive Incandescent Lamp

• Lamps with glass wedge bases for cars.
• Wide product range
• Reliable quality

OSRAM

792-4297   12V W2.1x9.5d

As cable assemblies become more complex, material quality in the harness is essential to the reliable functioning of vehicle systems.

Cable accessories for harness makers

Wire harnesses are becoming increasingly complex as the amount of on-board electronics grows and high-voltage electric systems in vehicles evolve.

HellermannTyton products made from high-performance materials are helping cable harness makers reduce the risk of failure through abrasion, corrosion or electro-magnetic interference.

Smart installation

Quality assurance starts with the cable ties in the wiring harness. The EVO9 Cable Tie Gun ensures that all cable ties are applied and cut flush at precisely the correct tension. Some ingenious engineering reduces the risk of repetitive manual stress on the operator whilst increasing the lifespan of the blade.

EdgeClips and SolidTack Cable Tie Mounts are the solution of choice for many vehicle engineers wherever holes or bolts are not available for fastening cables in the vehicle. EdgeClips are available in different geometries for securing bundles across, along or parallel to edges. Self-adhesive SolidTack Cable Tie Mounts are manufactured with a high performance acrylic-based adhesive specially designed to adhere strongly on low-energy surfaces. The initial adhesion is so strong that bundles can be fixed immediately.

Ultimate protection

SA47-LA heat shrinkable tubing is designed to reliably seal connections of different materials. The use of a black adhesive in combination with the transparent tubing makes visual inspection of the seal quality possible.

HEGEMIP braided sleeving helps guarantee the smooth operation of in-car electronics, digital connectivity and infotainment systems by adding a robust layer of protection against electromagnetic radiation emitted by high-voltage-cables.

HelaTape Protect harness tapes are characterised by their resistance to ageing and temperature variety as well as their easy handling. They are the ideal protection against abrasion and vibration noise throughout the vehicle.

Key product ranges:

- EdgeClip Cable Tie Mounts
- SolidTack Cable Tie Mounts
- EVO9 Cable Tie Gun
- SA47-LA Heatshrink Tubing
- HEGEMIP Shielded Sleeving
- HelaTape Protect Harness Tapes

HellermannTyton

Delphi Metri-Pack 150 Sealed Female Automotive Connectors

- Metri-Pack 150 sealed female automotive connectors with triple rib silcone rubber seals for environemtal protection.
- These Metri-Pack 150 sealed female automotive connectors have a low energy, low voltage capability, a maximum continuous current of 14 A, offer a high resistance to chemicals and abrasion and withstand a wide temperature range of -40 to 125°C.
- Typical applications for these Metri-Pack 150 automotive connectors include critical low energy electronic underhood vehicle applications where environmental protection is essential.

DELPHI
Innovation for the Real World

801-0910	Delphi Metri-Pack 150 Series, 1 Row 4 Way Cable Mount Socket Connector, with Crimp Termination Method
801-0904	Delphi Metri-Pack 150 Series, 1 Row 3 Way Cable Mount Socket Connector, with Crimp Termination Method
801-0926	Delphi Metri-Pack 150 Series, 2 Row 6 Way Cable Mount Socket Connector, with Crimp Termination Method
801-0932	Delphi Metri-Pack 150 Series, 2 Row 8 Way Cable Mount Socket Connector, with Crimp Termination Method
801-0941	Delphi Metri-Pack 150 Series, 2 Row 10 Way Cable Mount Socket Connector, with Crimp Termination Method

TE Connectivity 1.5 Superseal Series, Connector Housings - AMP Superseal 1.5

- Comprised of black 6.6 glass filled poly-amide
- 1 - 6 positions
- Plug housings for receptacle contacts, cap housings and tab contact variants
- Pre-assembled secondary lock
- Silicon rubber seals
- Panel or cable mount
- Temperature range of the 1.5 mm pitch superseal series is of -40 to +125°C
- Suitable for powertrain, security, and body & chassis systems

TE

314-1198	TE Connectivity AMP SUPERSEAL 1.5 Series, 1 Row 2 Way IP66 Cable Mount Plug Connector, with Crimp Termination Method
136-1723	TE Connectivity AMP SUPERSEAL 1.5 Series, 1 Row 2 Way IP66, IP69K Cable Mount Socket Connector
314-1205	282087-1 - TE Connectivity Male Connector Housing - AMP SUPERSEAL 1.5, 6mm Pitch, 3 Way, 1 Row
136-1724	282087-1 - TE Connectivity Male Connector Housing - AMP SUPERSEAL 1.5, 6mm Pitch, 3 Way, 1 Row

DT Series Receptacles

- IP68
- Wire-to-Wire Connection System
- Operating Temperature Range of -55 to +125

DEUTSCH

425-765	Deutsch DT Series, 2 Way Socket Connector, with Crimp Termination Method
425-632	Deutsch DT Series, 4 Way Plug Connector, with Crimp Termination Method
425-705	Deutsch DT Series, 6 Way Socket Connector, with Crimp Termination Method
425-709	Deutsch DT Series, 8 Way Socket Connector, with Crimp Termination Method
425-418	Deutsch DT Series, 12 Way Socket Connector, with Crimp Termination Method

ACW High Temperature Engine Harness Wiring

- High operating temperature up to 150°C
- Designed to function in the hot engine compartment environment
- Excellent mechanical strength
- Ideal for automotive wire handling
- ETFE material performance at reduced cost
- Smaller, lighter and more flexible
- High level of compatibility with other automotive materials

Schneider Electric

| 369-4787 | TE Connectivity 100m ACW Automotive Wire 0.5 mm² CSA Red Flame Retardant, Low Smoke Density, Self-extinguishing, 50 V |
| 369-4850 | TE Connectivity 100m ACW Automotive Wire 1.5 mm² CSA Black Flame Retardant, Low Smoke Density, Self-extinguishing, 50 V |

Helawrap Protective Tubing

- Quick and easy to protect and bundle cables
- Manufactured from Polypropylene (PP)
- Available in different lengths, colours and sizes
- Flexible design that enables cable to branch off at any point

HellermannTyton

| 647-8780 | HellermannTyton Spiral Wrap, I.D 25mm 27mm Polypropylene Helawrap Series |

SMC M8 3-Pin Cable Assembly

- 25 Vdc supply
- M8, 3 pin connector

HellermannTyton

| 700-6294 | 5m Cable |

Lapp ÖLFLEX CLASSIC 110 5 Core YY Control Cable

- Flame-retardant according to IEC 60332-1-2
- Oil-resistant according to DIN EN 50290-2-22 (TM54)
- Chemical resistance at room temperature

| 787-4072 | Unscreened |

HARTING Han E Heavy Duty Power Connector Insert

- 6 pole insert
- Screw termination from 18 AWG to 14 AWG
- Compatible with 6B size housing and hood
- Rated to 16 A and 500 V
- Mechanical working life of ≥ 500 mating cycles
- Contact resistance of ≤ 1 mΩ

HARTING

114-8175	Male
114-8175	Female

HARTING Han B Top Entry Heavy Duty Power Connector Hood

- Metal or Polycarbonate bodied
- Single lever functionality for housing and hoods
- Hoods available in high or low types, and options of top or side entry. Bulkhead and surface mounting housings are also available with protective (metal or plastic) covers

HARTING

114-8210	6B

HARTING Han B Heavy Duty Power Connector Housing

- Metal or Polycarbonate bodied
- Single lever functionality for housing and hoods
- Hoods available in high or low types, and options of top or side entry. Bulkhead and surface mounting housings are also available with protective (metal or plastic) covers

HARTING

114-7885	6B

Cable Mount 5P Industrial Power Plug

- Glanded entry completely screwless industrial plug and connector, used to reduce installation time by approximately 60%
- Connection terminals strip conductors and provide contact as terminal is pushed home
- Integral pressure cable gland automatically gives strain relief and a watertight cable seal to IP44

MENNEKES®

530-6101	400 V

Red Cable Mount Industrial Power Plug

- Multi-Grip cable gland Quick-Connect screwless connection
- VDE tested
- IP44 rated

Bals

136-5698	32.0A, 415.0 V
136-5685	16.0A, 415.0 V

Amphenol Socapex

- RJ Field series RJ45 receptacles that allow ethernet Cat 5e connection for10 BaseT or 100 BaseTX networks to be used in harsh environments
- These RJF ethernet receptacles are IP67 sealed, shock, vibration and traction resistant, have 4 positon mechanical coding/polarization and are connected to an RJ Field plug using a MIL-C-26482 type bayonet coupling mechanism. No field cabling tools are required

Amphenol SOCAPEX

448-1683	RJ45

D-sub Connector Backshell

- Locking mechanism
- Halogen free
- RoHS compliant

molex

100-7440	Polyester Plastic Hood

HARTING Han A Heavy Duty Power Connector Housing

- Slim, space saving design • Robust diecast zinc construction
- Locking levers for a secure connection
- Range of mounting options and cable entry angles
- IP67 protection using seal screw

HARTING

181-0729	3A

D Sub Backshell

- These FMK Series Metal Hood Backshells have a Large Inner Chamber and an Angled or Straight Cable Outlet
- This large amount of internal space is particularly suitable for D-sub connectors with special contacts
- The design of the FMK Series Metal Hood Backshell includes strain relief on the cable outlet
- The FMK Series Metal Hood Backshell is easy to assemble thanks to the catch spring system and pre-mounted locking screws
- The FMK Series Metal Hood Backshells can be used with engagement hooks and locking or knurled screws

molex

291-6187	9 Way
291-6193	15 Way

Phoenix Contact Socket Adapter

- IP67 rated
- Made of premium materials to ensure this adapter lasts
- 60 V rated voltage
- Brilliant for off-site and on-site applications

PHOENIX CONTACT

721-1412	3 Pole

Phoenix Contact Cable assembly

- 100 mating cycles
- Operating temperature range -25 to +90 °C
- Surge voltage category II

PHOENIX CONTACT

802-6794	4 Core 300mm Cable

Lapp Skintop M16 Cable Gland With Locknut

- Double Lamella Gasket
- IP69 Protection
- Acid Resistance
- Chemical Resistance
- Temperature and Corrosion Resistance
- Operating Temperature Dynamic -25°C up to + 100°C
- Operating Temperature Fixed -40°C to +100°C

LAPP

405-8823	Brass

Cat5 RJ45 Connector

- From Phoenix Contact, a series of push pull connector inserts from the QUICKON range of RJ45 connectors
- These RJ45 connectors have IDC fast connect terminals with copper alloy contacts. This professional range of RJ45 connectors all have diecast zinc housings (apart from stock number 921-0183) which has PA-GF housing material
- The RJ45 connector inserts are available in 4 and 8 position options have an external cable diameter from 5 mm to 8 mm. Part number 921-0102 has metal EMC shielding. Part number 921-0183 is also 1 Gbit/s

PHOENIX CONTACT

921-0127   Male

Murrelektronik Free Hanging T Connector

- The Murr Elektronik T-coupler series comes with Parallel circuit Plastic housings with good resistance against chemicals and oils. The resistance to aggressive media should be individually tested for your application. Further details on request
- Operating voltage maximum 60 V AC/DC
- Operating voltage (only ul listed) 30 V AC/DC
- Protection IP67 inserted and tightened (EN 60529)

MURR ELEKTRONIK

200-1816   5 Contacts

Han D 10A Crimp Contact

- The Han-Com combination connectors are industrial connectors designed for providing power and signal contacts in one insulation body
- The Han-Q Series are connector inserts with a compact design, while the Han D/DD/ DDD series are connectors built for high pin count interconnect applications

HARTING

114-7986   Female

114-7970   Male

HARTING Han ES Press Heavy Duty Power Connector Insert

- Cage clamp terminations for quick and easy wiring Vibration proof design
- Multiple connection possibilities
- Can with used with wide range of hoods and housings

HARTING

113-8681   10 contacts, 16A, Male

Pepperl + Fuchs Screw Connector

- The Pepperl + Fuchs circular connector 4 female pin. It has M12 product has 250VAC/
- Screw terminal conne
- Metal locking

PEPPERL+FUCHS

203-0995   4 Contacts, M12 Connector

203-0988   5 Contacts, M12 Connector

Festo NECU Series Connector Assembly

- Cable diameter 6 mm to 8 mm
- Terminal cross-section 0.14 mm² to 0.75 mm²
- IP67 Protection
- Ambient temperature -25°C to +85°C
- CE mark to EU directive low voltage devices
- RoHS compliant

FESTO

136-6867   For Use With Fieldbuses

HARTING Han-Modular Heavy Duty Power Connector Module

- Rated at 200A 1000V
- Over 500 mating cycles
- Operating temperature range -40 to +125° C

HARTING

843-0070   Female

843-0077   Male

Han PushPull, 0935 Cable Mount Connector

- Fully Shielded
- 360° shielding contact
- PushPull Technology

HARTING

174-1812   Male

Han B Side Entry Connector Hood

- These hoods and housings are compatible with appropriate inserts from the Han DD®, EE, E, ES, EAV, Com and modular series
- The 'compatibility' table associated with item types 1 and 2 details that relationship by indicating the specific Harting insert series, together with a stock number typical of each insert range

molex

844-3256   15 Way

Siemens Data Acquisition Terminal Block

- Field assembly industrial Ethernet M12 connector
- Integrated insulation displacement contacts
- For 4-wire twisted pair FC installation cables (100 Mbit/s)
- Integrated strain relief
- Operating temperature ranges between -40°C and 85°C

OSRAM

666-5259

RS PRO Alkaline AA Battery

- Range includes: AA, AAA, C, D and PP3
- 1.5 V or 9 V
- Long lasting - last twice as long due to the purity of materials used within the battery
- Used in numerous everyday household, commercial and industrial items
- Ideally stored at room temperature, or a maximum of 25°C to maintain the battery life

917-6588 1.5V

Energizer MAX Alkaline AA Battery

- 1.5 V or 9 V
- AA, AAA, PP3, C and D Batteries
- 30% longer than previous Energizer MAX batteries
- Mercury free
- 10-year shelf life
- Guaranteed leak proof
- High energy density

914-5048 1.5V

Panasonic BR2032 Button Battery

- Higher the capacity the longer life time
- Non-Rechargeable
- Wide operating temperature range
- Resistant to vibration, shock and acceleration
- They have excellent reliability and a high capacity

597-419 3V

Yuasa 12V Sealed Lead Acid Battery

- Sealed Lead-acid (SLA)
- EUROBAT classification: 3 to 5 years
- Absorbed Glass Matt (AGM) technology with no free acid
- Gas recombination technology
- Good recovery from deep discharge
- Used in any orientation except continuously inverted

707-4966 8.5Ah

Glass Battery Hydrometer

- If you service automotive batteries, this highly precise battery hydrometer for measuring the state of charge of lead acid batteries when servicing automotive batteries is ideal
- It is the perfect instrument for measuring the specific gravity of battery electrolyte and it allows each cell to be individually checked at a glance.
- The high precision scale is in Baume degrees & specific weight with coloured sections for a quick reading.

196-8187   Glass Battery Hydrometer

RS PRO Terminal Brush

- This cleaning brush is designed to quickly and efficiently remove acid deposits from battery poles and terminals.

196-8244   RS PRO Terminal Brush

Battery Lifting Tool

- Two rubber covered plates grip the sides of batteries and will not slip off making easy work of lifting, carrying and replacing batteries in vehicles
- For use with batteries with widths between 120mm and 200mm

241-7652   Battery Lifter For Battery Widths 120 → 200mm

1L Battery Filler

- A distilled water dispenser for battery filling
- Automatically stops pouring when correct level is reached in battery cells
- Manufactured from oil, acid, and solvent-resistant plastic

196-8222   1L Battery Filler

TestMate AUTO - 200Ah battery Tester

- Tests the correct operation of the 12V charging/starting system of the vehicle
- Compact, light, and can be used in the workshop or at the sales counter
- Suitable for car, van, marine and all other 12V starter batteries up to 200Ah
- For all battery technologies: STD, AGM, GEL
- Easy to use: select battery type, capacity, then TEST

905-3652   TecMate TA20 Battery Tester For Various Battery

Ansmann LCD Battery Tester

- Can be used to monitor the 12V or 24V batteries of alternator and the charge controller
- Displays the currently measured output voltage of the car battery exactly to 0.1V
- With a bright, quality LED-display for voltage indicator
- IP20

843-0724   Ansmann 1900-0019 Battery Tester 12 to 24V

ON Semiconductor and Mercedes EQ Formula E Team to create cutting-edge power solutions for vehicle electrification.

With 9 global car brands going head to head, Formula E has evolved into much more than just a racing series - it's a battle for the future of the automotive industry. All of the competing cars are powered by pure electricity, paving the way for the cars of tomorrow.

The 2018/19 season marked a whole new era for Formula E, with the introduction of the Gen2 car. With twice the energy storage capacity of the original Gen1 car, the vehicles can now sustain power from start to finish without the need for a mid-race swap.

Since the series' global debut in Beijing back in 2014 the electric car industry has progressed rapidly, reflected in the current cars, which have 250kW of power and are able to accelerate from 0-100km/h in 2.8 seconds with a top speed of 280km/h.

Of course, these cars need technology that can withstand high levels of shock, vibration and extreme temperatures. The more efficient the semiconductor device, the less power is lost to wasted heat, resulting in better mileage or miles per watt of energy. At the same time, each team's engineers are aiming to make their cars' components smaller to save both weight and space.

This is why the Mercedes EQ Formula E Team, who will compete in the Formula E Championship for the first time 2019/20, has partnered with ON Semiconductor to develop their debut car.

ON Semiconductor is a leading provider of semiconductor-based solutions, and already has its technology utilized in the energy recovery pack that controls ignition and injection drivers of the Mercedes-AMG Petronas Motorsport race car, which has won four consecutive Formula One World Constructors' championships and five consecutive Drivers' titles.

Building on this, ON Semiconductor are now collaborating with the Mercedes EQ Formula E Team in developing next-generation electric powertrain innovations for cutting-edge performance and efficiency.

"Formula E cars see massive power transfers during their running so it's not a simple electrical problem," said Dave Priscak, vice president, global solutions engineering at ON Semiconductor. "Our comprehensive expertise that spans both mechanical and electrical engineering offers full solutions to the innovation of next generation electric vehicles. We look forward to continuing our work with Mercedes to further capitalize on this expertise in the development of technological advancements in power devices and electric vehicle technology."

ON Semiconductor power products and solutions include IGBTs, high voltage gate drivers, super junction MOSFETs, high voltage rectifiers, high voltage DC-DC, as well as wide band gap (WBG) developments in Silicon Carbide (SiC) and Gallium Nitride (GaN) that can be used in next generation electric vehicles. These technologies provide longer driving range between charges, faster battery charging times and better thermal management.

onsemi

Discover more exciting automotive industry news at designspark.com

Karcher High Pressure Washer

- Ideal for use in any professional environment
- Shockproof casing protects against damage and dirt
- Fitted carry handle, retractable handle and cable support strap for comfortable use
- Can be used vertically or horizontally
- Excellent accessory storage
- 15 m high-pressure hose

909-0829   HD 5/15 CX Plus

Karcher 62950900 Pressure Washer Cleaner

- For use with AP 100/50 M Series Cleaner, HD Series Pressure Washer, HDS Series Cleaner, HWE Series Electric Flow Heater

763-9080   Karcher 62950900 Pressure Washer Cleaner For Various Karcher Series

Spray Wash Cleaner - Plus

- Safe, effective aqueous cleaners for use with spray wash equipment
- Will remove oils and greases
- The cleaner is a heavy duty grade designed for removing thick greases and carbon contamination
- Dilutes up to 10% (maximum)

434-9107   Mykal Industries 67290 Pressure Washer Cleaner for Spray Wash Equipment

RS Pro Spider Type Oil Filter Wrench

- High-quality, self adjusting
- Ideal for use in restricted access areas
- Gripping capacity 75 mm to 120 mm (2 15/16 - 4 3/4 in)

449-9599   RS PRO Oil Filter Wrench 75 → 120 mm

Vehicle Oil Drain Pan

- Constructed from black high impact polyethylene Integral ledge for draining filters etc.

400-1091   Oil Drain Pan, RS PRO Polyethylene, W 400mm

CRC

Be Smart - GO "GREEN"

SmartWasher®
Environmentally friendly parts washer

The SmartWasher® Bioremediating Parts Washing System is both self-cleaning and non-hazardous

- **Non-toxic**
- **Non-polluting**
- **Non-corrosive**

SmartWasher®
SW-23
Parts/Brake Washer

Be Smart
GO "GREEN"

Advance Tapes Cloth Tape

• Very good long term resistance to outdoor exposure
• Strong
• Conformable to awkward shapes
• Good abrasion and puncture resistance
• Writable surface

494-483 50mm x 50mm, Black

Advance Tapes PVC Electrical Tape

• High breakdown voltage for excellent electrical insulation
• -5 to +70 °C working temperature for industrial and residential use
• Available in 10m, 20m and 33m rolls
• 12mm, 19mm and 28mm tape widths for various scale working
• Water Resistant
• UV Resistant

494-354 12mm x 20m, White

3M 425 Conductive Aluminium Tape

• 3M aluminium foil tape 425 can withstand a variety of moisture, weathering, UV and solvents in order to provide an excellent work life, indoors or out
• It provides an excellent heat shield in processes where high temperatures may damage adjacent surfaces and has a wide working temperature (-53 °C to +148 °C)
• The light reflective tape enhances lighting efficiency
• Excellent holding power while removing cleanly

175-7814 50mm x 55m

HellermannTyton Nylon 66 Cable Tie Assemblies Kit

• Consists of a range of moulded cable ties in nylon 6.6 and a tensioning tool, ideal for maintenance
• Operating temperature -55°C to +100°C
• Kit quantity 400

255-2806

Rocol Lubricant Oil

• Automatic lubrication unit for consistent, long term lubrication
• Precise lubricant discharge
• Up to 36 month discharge period
• Battery powered, electromechanical drive
1/4 BSP thread outlet
• For the lubrication of all types of ball, roller and plain bearings

330-6200 120 ml

Automotive fuse kit for mini fuses

• Handy compartmentalised hard case containing:
10 × 2A, 3A, 4A, 5A, 7.5A, 10A, 15A, 20A, 25A, 30A fuses

219-9562 Littelfuse Automotive Fuse Kit

RS PRO Screen Wash/De-icer

• Used neat this screenwash / de-icer can quickly remove ice from windscreens and windows
• When diluted with up to four parts water it can be used as a screenwash whilst also protecting the water bottle in below-zero temperatures

819-4071 RS PRO 5 L Can of Screen Wash De-icer

F21 LED Torch BlackAAA

• This device has strong aluminium construction, so you can be sure of its durability and resistance to impact. It emits a powerful light of 600 lumens (lm) and you can easily adjust the focus with a simple twist. Its specially designed domed lens ensures the torch produces a long-distance beam. It also features a strobe mode, making it more versatile.

196-4196 RS PRO LED Torch

RS PRO Battery Jump Lead

• Battery starter cables or jump leads for jump starting automotive batteries when suffering from a discharged battery.
• Booster cables are offered in 150A and 220A versions: 150 A cables are for use with vehicles up to van size 196-8250 220 A cables are suitable for all vehicle sizes 631-9215

631-9215 RS PRO 3.5m Battery Jump Lead, 220A

Petzl Head Torch

• Single button for quick and easy selection of brightness or light colour
• Ergonomic button, even with gloves
• Detachable, washable headband
• Compatible with mounting accessories that allow the lamp to be attached to any kind of helmet

191-9529 90 m Range

Ratcheting Hand Crimping Tool

• Robust positive lock provides greater mating assurance
• Direct vacuum pick-and-place; no capton tape needed
• Superior terminal polarization features prevent wrong terminal insertion
• Single lock 1 - 7 way, dual lock 8 - 15 way

904-8278 1.25mm CLIK-Mate Connector 26-28 AWG Crimp Terminals

Ratcheting Hand Crimping Tool

• Supports 22 - 0.3 to 16 mm2 wire size
• Suitable for crimping copper tubular terminals
• Features crimping indents conveniently marked with the wire size ranges
• Comfortable grip
• Provides two-hand grip in the final phase of crimping, increasing comfort and productivity

624-1291 Non-Insulated Terminals

Wire Stripper

• Zinc alloy body and handle
• Medium carbon steel sheet for stripping mechanism
• PVC injection soft grip
• High carbon steel for the cutting and stripper knife blades
• Spring steel for auto-return tension spring
• Suitable for use with PVC, silicone rubber and others

663-617 165 mm

94 Piece Mechanics Tool Kit

- Offering various hand tools to make a comprehensive kit. The tools are of dependable quality. Designed for professional mechanics and serious DIY experts. ches

734-8889 RS PRO 94 Piece Mechanics Tool Kit

Steel Spanner Set

- 26 Individual combination spanners
- Manufactured from high-quality, chrome-vanadium steel
- Hardened and tempered
- Supplied in handy storage case

388-3690 26 Piece

Hydraulic Bearing Puller

- High quality, forged steel provides superior reliability and service
- Precise hydraulic control allows fast, efficient and safe pulling
- Comes in a handy case which consists of hydraulic ram and nosepiece, main rod (200mm), thrust nut, extension rod (230mm), beam and bearing separator (4")
- 10-ton hydraulic power unit
- Portable

349-7249 75 → 105 mm capacity

RS PRO Square Drive Dial Torque Wrench

- Unlike conventional torque wrenches, dial torque wrenches, feature an analogue dial that is clear and easy to ready both in SI and Imperial units. It also contains two indicators (main and slave) for accurate reading and setting of torque value required.

575-649 3 → 40Nm

Cabinet Key

- 6.5 mm and 8.1 mm square sockets
- 6.4 mm (in) AF Hex socket
- 9.8 mm triangular socket
- 9 mm winged key drive
- Hex to in square drive adapter
- 7 mm slotted blade
- Pozidriv screwdriver bit
- Compact size, easy to carry and store
- Multifunctional tool - convenient and easy to use
- Ideal for use with a range of applications

439-3025 Zinc Alloy 5 way

Telescopic Extendable Pick Up Tool

- Extendable shaft of up to 65cm that's ideal for accessing hard to reach places
- Magnetic head for easy retrieval of magnetic objects
- Clip for easy storage in a pocket
- Chrome vanadium structure offering excellent corrosion resistance and durability
- Lift capacity of up to 3.5 kg
- Stylish black outer casing

411-3122 650 mm Chrome

RS PRO

WE'VE GOT IT IN HAND

The RS PRO range of hand tools.

Everything you need to get the job done.
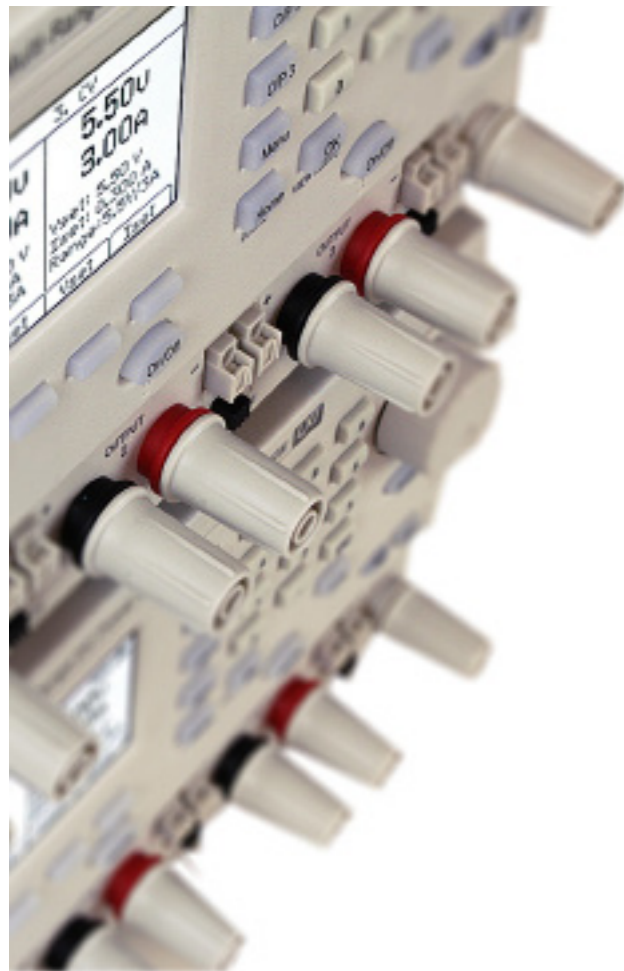
rspro.com/tools

Measurably Better Value

Powerful.   Accurate.   Affordable.

Laboratory Power Supplies

> 30w to 1200w Single and Multi channel PSUs for bench-top or remote control and system use.
> Flexible electronic DC loads for general purpose applications.

Waveform Generators

> Analog and Digital (DDS) function generators with frequency capability up to 240MHz.
> Dedicated pulse generators with true pulse capability.
> True variable-clock arbitrary generators with up to four channels.

Precision Measurement

> Bench-top digital multimeters for dual display, system and logging.
> Handheld and bench-top frequency counters up to 6GHz.
> Innovative DC to 5MHz current probes for PCB tracks.
> Precision component measurements.

RF & EMC Test Equipment

> Handheld RF spectrum analyzers with frequency upto 6GHz.
> RF signal generators with frequency capability up to 6GHz.
> EMC analyzers for power Harmonics and Flicker.

T & M Solutions Designed to meet your needs

Multifunction Tester
- Automatically measures volts ac and volts dc with precise digital resolution
- Displays resistance to 1000 Ω
- Easy and accurate Open Jaw current measurement
- Continuity beeper

FLUKE.

292-1230 T5

I310S Current Clamp
- The i310s Current Clamp has been designed for use with oscilloscopes and digital multimeters for accurate nonintrusive measurement of AC, DC and complex waveform currents

FLUKE.

401-422 19mm

Handheld Digital Multimeter
- 6000 count LCD with 33 segment bargraph
- True rms (a.c.) measurement
- EN61010-1 safety standard compliance to Cat IV 600V & Cat III 1000V
- Resistance, continuity and diode measurement

FLUKE.

394-4486 177

Handheld Digital Multimeter
- User friendly interface
- True-RMS for excellent precision
- 6,000 count LCD display screen with backlight feature
- Safety category CAT III, CAT IV
- Safety Category and Voltage 600 V, 1000 V

RS PRO

161-1629 RS-9660B

Handheld Digital Multimeter
- User friendly interface
- Compact design makes this multimeter ideal for working on the go
- Clear and preice 2000 count LCD display screen
- Safety category CAT III, CAT IV, 600 V, 1000 V
- Ideal for measurement of AC Current, AC Voltage, Continuity, DC Current, DC Voltage, Diode, Resistance

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161-1625 RS-660

Temperature Anemometer
- Integrated 40mm vane
- Display backlighting
- Timed mean value calculation
- Windchill factor calculation for outdoor areas

Be sure. testo

292-313 410-2 NTC, Rotary Vane 20m/s

WHEN MAINTENANCE MATTERS

RS PRO APPROVED

RS PRO