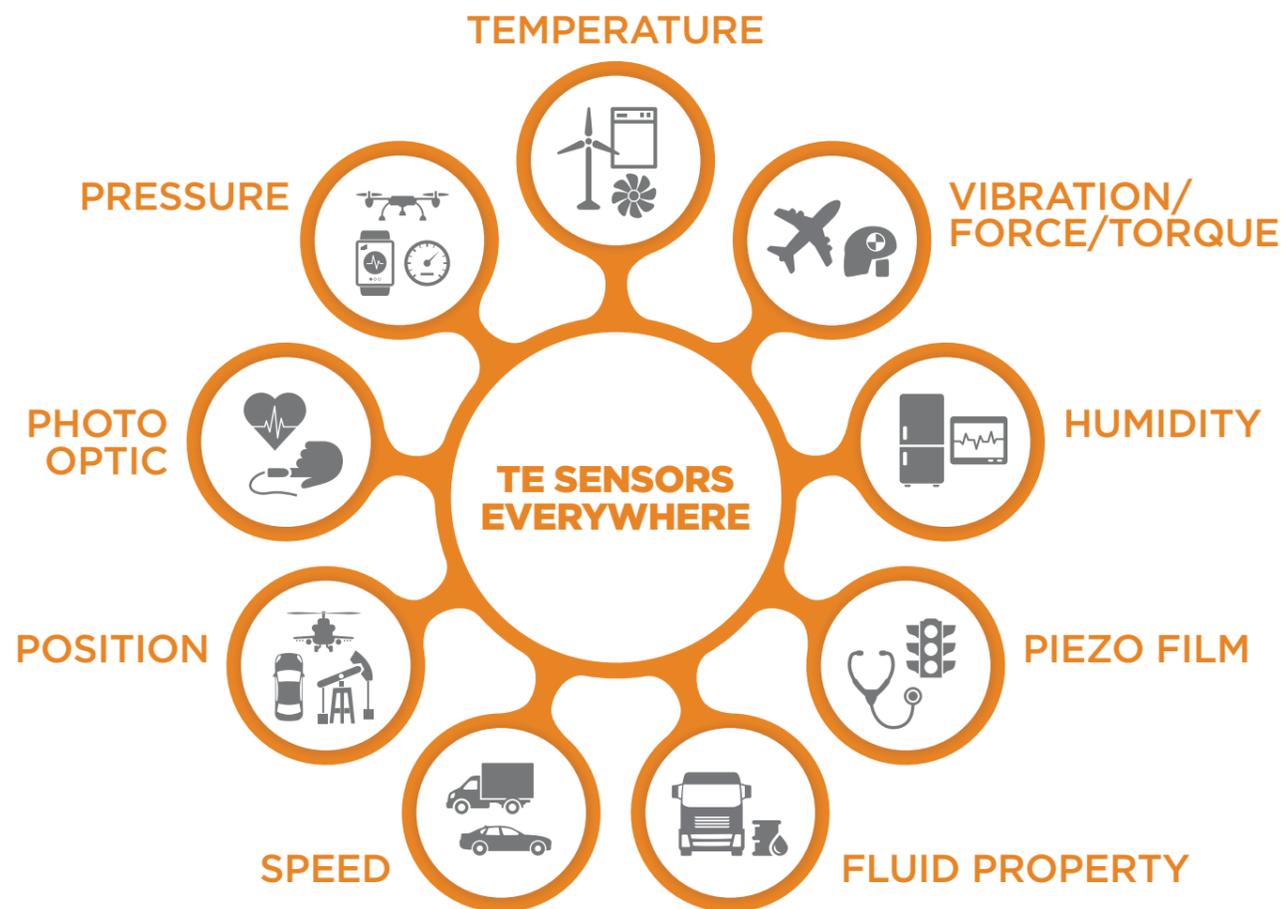


The NEXT LEVEL of **AUTOMATION**

Connecting you with the smart manufacturing solutions for today, tomorrow and beyond.



The Future of Automation
Page 2

New Products
Page 6



Setting up Machine Networks
Page 12

The Future of Industrial Automation

How is technology transforming its processes?



The first industrial revolution in factories changed the world in the late 1700s. Then came the second during the early 20th century with the combustion engine, and the third after World War II with the development of transistors and microprocessors. Now in the 21st century, we're experiencing the fourth industrial revolution; known as Industry 4.0.

Today's revolution is the digitisation of the manufacturing industry, powered by advancements such as the Industrial Internet of Things (IIoT), robotics, augmented reality, and artificial intelligence.

These next-generation technologies help to improve productivity and safety, reduce downtime and increase energy efficiency. Read on to learn how some of these tools work when applied to industrial environments, and how they can benefit businesses now and in the future.

The Industrial Internet of Things

IIoT is formed by connected devices, sensors and computers which collect and analyse data in manufacturing environments; helping to reduce waste and inefficiencies. Machine-to-machine communication (M2M) and sensors create an environment where IIoT can prosper.

Businesses are already using IIoT and automation to monitor internal environments of production facilities and minimise energy use to lower manufacturing costs. By using devices like smart helmets to communicate with manufacturing equipment, safety and working conditions can also be improved.

Industry 4.0 is the heart of smart manufacturing, allowing large amounts of data to be stored and processed in the cloud. This means whether they're on or off-site, manufacturers will be able to monitor, maintain and adjust equipment with complete accuracy without stopping production.

This is assisted by open source devices and software, which enable greater control and flexibility over processes through the use of computer programming.

This is because the software has source code that anyone can inspect, modify, and enhance – the code computer programmers can manipulate to change how a program or application works.

IIoT is changing the industrial landscape in many ways, and its impact will only continue to increase.



Robotics is on the rise

Robots are becoming an increasingly popular way of completing dangerous or repetitive tasks without human involvement. Not surprisingly, the International Federation of Robotics (IFR) predicts that more than 1.7 million new industrial robots will be installed in factories worldwide by 2020.

IIoT enables robotic hardware to be smarter, faster, and more aware. Combined with sensors, a mobile robot could, for example, identify when a worker is in the area and slow or stop production to allow for input. This type of robot, known as cobot, collaborates with humans and one another to work more intelligently.

There's an expansive range of robots available – from basic arms to autonomous vehicle-mounted machines. They're becoming more common in some of the world's major manufacturing industries, including food and beverage, pharmaceuticals, aerospace and construction.

Automation with robotics enables a level of accuracy and productivity beyond human ability. Plus the new generation of robotics is not only much easier to program, but easier to use, with capabilities like voice and image recognition.

Augmented reality in real life

With Industry 4.0 and intelligent manufacturing, more consideration is being given to the value of augmented reality (AR) for industrial applications. New tools are enabling companies to create and test scenarios in the virtual world – simulating the design process and assembly line prior to a product being created.



AR has the potential to recharge the manufacturing industry by connecting workers with equipment and allowing them to interact with sensor data. The technology aims to produce efficient operations by reducing production downtime, quickly identifying problems and keeping processes running.

This can be achieved through AR glasses which overlay virtual reality onto the real world. With this, engineers can see renderings of bolts, cables, part numbers and instructions on how to assemble a specific component.

It's also possible to use AR-enabled mobile apps to scan QR codes to view live video, graphics, images, or use it to repair machines.

Many manufacturers have begun to explore the benefits augmented reality can offer in an industrial environment, a trend that has nowhere to go but up as AR hardware and software improves.

Artificial intelligence and machine learning

Artificial intelligence (AI) systems show information relating to a machine's condition and productivity, as well as detect irregularities and make it possible to learn from experience and perform human-like tasks. Meanwhile, machine learning is a subfield of AI which uses statistical techniques to give computers the ability to 'learn' with data.

Machine learning is much faster than humans, as it can analyse immense amounts of data in real-time and turn it into actionable improvements; helping speed production and lower costs by avoiding errors.

With AI and machine learning, manufacturers can use more of their production capacity and optimise the best possible combination of machines, staff, and suppliers.

The technology can also be used in cobots, allowing for a robot to not only safely work alongside humans, but also be easily reprogrammed for new tasks – unlike traditional industrial robots which rely on extensive programming for each action.

One of the greatest benefits is increased uptime and productivity from predictive maintenance. With AI integrated with industrial robotics technology, machines can monitor their own accuracy and performance and signal when maintenance is needed to avoid expensive downtime.

The use of AI and machine learning can enhance performance across all areas of a supply chain including warehousing, transportation, customer feedback, production, and packaging.

What the future holds

With half of the manufacturers in the region expected to have smart factories by 2022, it's evident the landscape of industrial automation is changing.



Read on to find out more about how you can take your automation to the next level with our wide range of products and design tools.



‘Black-box’ solutions fall by the wayside as connectivity and data drive next-generation smart machines and factories

Heiko Luckhaupt from RS Components looks into how companies can evolve their architectures in order to address the needs of more data-driven customers. Even those that already exist on a digital platform can take greater strides to integrate data collection and flow into wider operations.

The advent of the Industrial Internet of Things (IIoT) and Industry 4.0 have seen many companies jumping onto the digital train, as more and more vertical sectors embrace the advantages to be had from a data-driven infrastructure. OEMs are pushing greater connectivity and data capability, or the end users are

demanding it. In either case, connectivity across the entire value and supply chain is what is underpinning this fourth industrial revolution. With access to more data, plant owners, line supervisors and machine operators have a greater insights in their operations, which ultimately gives them the ability to make more informed real-time decisions to fine-tune their production processes. This data can then be historically analysed to spot trends and, in the shorter term, shared to the wider enterprise to help with forecasting, maintenance and logistics. The ultimate aim is far greater agility, more flexibility to adapt machines to changing market demands and enhanced proactivity for other operations. One company that recognised the potential of a data-capable architecture – and not just an architecture that covered its specific domain – was Shanghai SIASUN Robot and Automation Co., Ltd. As a supplier of industrial robots for a variety of tasks, including spot welding, arc welding, handling, assembling, gluing,

spraying and casting, to name but a few, it set itself a mission to not only deliver this greater connectivity, but also improve the efficiency and agility of its robotic solutions. Set up in 2000, the company has grown to become one of the largest robot makers in China. With its own independent research and development department, it builds robots that are designed to address the needs of many industrial applications across a variety of segments, from food, through packaging and on to automotive and trucks. Underpinning this desire for flexibility and connectivity is the deployment of advanced automation and motion solutions that not only provide the accuracy and repeatability demanded by robotic applications, but also deliver the all-important connectivity to wider systems, both inside and outside of the production environment. The days of black-box controllers for applications are long gone. Customers are now demanding open, expandable systems, based on off-the-shelf hardware running on networks that deliver

plug-and-play capabilities, not just line side, but also into the wider enterprise. Siasun opted for the PacDrive 3 motion control platform from Schneider Electric. PacDrive 3 is a complete automation solution for motion-centric machines and is based upon proven logic motion technology, which unifies PLC, motion and robotics control functionality on a single hardware platform. Thanks to its centralised architecture, it is capable of controlling a wide range of multi axis servo-driven solutions. In addition to robotics, it is also seeing applications in packaging and materials handling, where precision and repeatability are just as important. Each robot has three or four Lexium 52 servo amplifiers and motors operating alongside the PacDrive 3 solution, communicating over Sercos and OPC UA and with programming undertaken in Schneider Electric’s EcoStruxure Machine Expert programme. Siasun completed full programming in an incredibly short timescale. The open technology deployed by PacDrive 3 leverages international standards, which, as a result reduces complexity, greatly aiding design, testing, installation, commissioning, start up, operation and maintenance. Using PacDrive 3, Siasun has enhanced the performance of its parallel robot – with efficiency improvements of up to 30%. Not only does this provide a stronger sales message for Siasun, but it ultimately delivers greater saving to the end customer too.

Already successfully deployed in electronics manufacture, pharmaceutical production lines and food packaging, Siasun is now looking to implement more of Schneider Electric’s smart manufacturing solutions, to further boost its competitiveness and its drive to grow export opportunities. EcoStruxure is Schneider Electric’s single, open, IoT-enabled, plug-and-play architecture that has been designed to deliver innovation and information across multiple industrial domains, including power, IT, building, machine, plant and grid. The ultimate aim of this broad connectivity is the delivery of enhanced value around safety, reliability, operational efficiency and sustainability. Indeed, EcoStruxure Machine-based applications have demonstrated 40% faster machine integration, 50% maintenance time savings, 30% reductions in time to market and improved use of resources. EcoStruxure Machine delivers key technologies for product connectivity and edge control, using cloud technologies to provide analytics and digital services, and the PacDrive 3 solution is one part of a much larger offering. With Modicon PLCs and PACs offering the central data connectivity, a wide range of complementary products are available, all of which can add data into the IIoT mix to enhance the aforementioned decision making process. These include Schneider Electric’s Magelis STO compact HMIs; Altivar low-voltage AC machine drives; Lexium servo drives &

motors; and TeSys motor circuit breakers, contactors and reversing contactors & enclosed motor starters. RS Components is committed to providing its customers with the means to help them take the first steps into smart manufacturing. Although the concept can appear daunting, the plug-and-play nature of hardware and wizard-based programming makes this evolution a lot simpler than it appears. All of the Schneider Electric products are available from RS, as are many others. And with open standards driving industry, it really is remarkably easy to create next-generation solutions that not only address today’s data-hungry economy, but also provide a foundation for future iterations – which are all going to be centred around connectivity and seamless interconnected data paths.

 Find solutions for you at hken.rs-online.com

What's on the Product Launchpad?

We're constantly launching new products and brands so you can complete your mission with the latest technologies. Have a look at the newest products and brands we think will take off in Industrial Automation.



FLIR DM285 Handheld Thermal Imaging Multimeter

- A built-in 160 x120-resolution thermal camera sensor visually guides you to an electrical problem
- Performs 18 measurement functions including True RMS, VFD mode, LoZ, NCV, and more
- Drop-tested, splash and water resistant

NEW



168-1355 10A ac 1000V ac 10A dc 1000V dc DM285

FLIR DM91 Handheld Digital Multimeter

- Rich feature set: Includes True RMS, VFD mode, uA measurement, LoZ, NCV, and more
- Thermocouple input + test probe: The DM91 includes high-quality test probes and a Type K thermocouple input
- Durable: Drop-tested

NEW



168-1353 10A ac 1000V ac 10A dc 1000V dc DM91

FLIR DM62/DM64/DM66 Handheld Digital Multimeters

- All the features you need in one tool
- Rich feature set ideal for various electrical applications
- Fast Efficient Testing and Troubleshooting
- Operate the meter with one hand, thanks to compact design and easy-to-access buttons

NEW



168-1345 TRMS Digital Multimeter with non-Contact Voltage DM62
168-1347 HVAC TRMS Digital Multimeter with Temperature DM64
168-1349 Electrical and Field Service TRMS Multimeter with VFD mode DM66

Compact Magnetic Box Inclinometer

- Digital electronic spirit level in practical format - with Bluetooth interface for measurement data transfer
- Reference function for transferring angles
- FlipDisplay :the display automatically turns when overhead measurements are involved so the illuminated display is well readable under all conditions

NEW



163-5164 User Calibrated, 59 x 59 x 28mm 081.262A

Humidity and Temperature Data Logger

- The readings are saved in the logger and simply read out by your PC with USB interface
- Memory for 16000 (171) readings
- Temperature datalogger (170)
- 2000 Counts digital LCD display (171E)

NEW



146-9094 Battery Powered, Digital, LCD Display

Modular Oscilloscope Probe

- Attenuation: 10:1
- Bandwidth: 150MHz
- Rise Time: 2,3 ns
- Cable Length: 1, 2m

NEW



146-6613 Probe Type: Passive 150MHz 600V

Moisture Meter

- Used to measure the moisture level in sawn timber (also cardboard, paper) and hardened materials (plaster, concrete and mortar)
- It displays the moisture level in the material straight away

NEW



146-9081 Max. Measurement 0.2 → 2 (Building Material) %, 6 → 44 (Wood) %

Light Meter

- 3999 Counts Large Backlit LCD Display
- Low Battery Indication
- Sampling Rate: 2.5 times per second
- Spectral Response close to CIE luminous spectral efficiency
- Cosine Angular Corrected
- Confirms to JIS C1609: 1993 and CNS 5519 General A class specifications

NEW



146-9083 40000lx

Siemens LOGO! 8.2 Logic Module

- Integrated Web Server Refined screen giving a new look and feel to the Logic Module
- 6 line display with 16 characters per line meaning more specific messages can be used via text
- Optical emphasis of alarms catered for thanks to the selectable white, orange & red backlighting

NEW



165-3222 24 V dc, 8 x Input, 4 x Output 6ED1052-1CC08-0BA0

Spherical Metric Roller Bearing

- Best valued option to brand alternatives
- Suitable for multiple industries such as maintenance engineering, prototyping and machine building

NEW



146-9327 50mm I.D., 90mm O.D.
146-9328 75mm I.D., 35mm O.D.
146-9324 45mm I.D., 75mm O.D.
146-9321 40mm I.D., 62mm O.D.
146-9320 40mm I.D., 68mm O.D.

Retro-reflective Photoelectric Sensor

- 10Vdc to 30 Vdc supply voltage
- Single turn sensitivity potentiometer on retro and diffuse models (finger or screwdriver adjustable)
- Solid-state complementary (SPDT): NPN or PNP (current sinking or sourcing), depending on model

NEW



847-9404 Max. 6.5 m Detection Range, PNP IP67 Barrel Style QS18VP6LV08

CO2 & RH/T Sensor Kit

- NDIR CO2 sensor technology
- Integrated temperature and humidity sensor
- Best performance-to-price ratio
- Dual-channel detection for superior stability

NEW



172-0554 Carbon Dioxide Sensor SEK-SCD30

RSAC Inverter Drives with EMC Filter

- Rugged diecast aluminium enclosure Hinged cover
- Diagnostic LED status indicators
- Easy install, simple operation (No programming required)
- GFCI/RCD compatible

NEW



136-3107 0.75 kW
136-3109 1.5 kW
136-3110 2.25 kW

3-Way RKT Series M12 Connectors

- Feature an industry standard 3, 4 or 5 pole female connector, with threaded lock nut and straight configuration
- Connector IP67 rated when mated
- O ring material FKM
- Knurled Nut CuZn nickel plated
- Contact material CuZn pre-nickel 0.3 Micron gold plated

NEW



161-5833 PVC Right Angled Female Connector RKWT 4-3-06/2 M
161-5835 PUR Straight Female Connector RKT 4-3-224/2 M

LAN Test Equipment of Distance to Fault

- The Tester can check UTP and STP Cat 5E, 6, 6A and Coaxial Cable
- It can Identify Tester you can determine the Continuity and Wiring of the Cable Pattern
- Comes with the Low Battery Indicator
- It uses TDR (Time Domain Reflectometer) to measure the length and distance of the cable

NEW



136-8577 Distance to Fault

4-Way RKT Series M12 Connectors

- Feature an industry standard 3, 4 or 5 pole female connector, with threaded lock nut and straight configuration
- Connector IP67 rated when mated
- O ring material FKM
- Knurled Nut CuZn nickel plated
- Contact material CuZn pre-nickel 0.3 Micron gold plated

NEW



161-5834 PUR Straight Male Connector RST 4-225/2 M
161-5836 PVC Straight Female Connector RKMV 4-07/2 M

Continuous or Intermittent Illuminated Buzzers 24v ac/dc

- Bezel material plastic Mounting diameter 22mm
- Standard head type
- Continuous or intermittent tone

NEW



167-9011 Red lens XB5KS2B4
167-9014 Yellow lens XB5KS2B8
167-9008 Black cap XB5KS8

4300 Series Axial Fans

- Speed signal
- Go / NoGo alarm
- Alarm with speed limit
- External temperature sensor
- Internal temperature sensor

NEW



168-2638 150m³/h, 5W, 12 V dc 4312N/17MT
168-2640 285m³/h, 12W, 12 V dc 4312NH3

Infrared Temperature Sensor

- Non-contact industrial temperature sensor
- Simultaneous voltage and alarm outputs
- Voltage output 0 to 5 V dc or 0 to 10 V dc linear output for measured temperature
- Open collector alarm output



161-8103 1m Cable, 0°C to +1000°C

Switch Mode DIN Rail Panel Mount Power Supply

- Universal AC input/full range
- Protections: Short circuit/Overload/Over voltage/Over temperature
- Cooling by free air convection
- Can be installed on DIN Rail TS-35/7.5 or 15
- UL 508 (industrial control equipment) approved



282-473 48W, 24V dc/ 2A

Heat Shrink Kit

- 170 mixed heat-shrink pieces
- Sizes range from 2.4 mm to 12.7mm
- Available in adhesive lined 3:1, and non-adhesive lined 2:1 shrink ratios
- Flame retardant
- Supplied with useful storage box



397-679 170 pieces

Antistatic Lightweight Field Service Kit

- Kit contents: high quality static dissipative mat (1 x 10mm male snap); adjustable wrist strap set; 4m EBP ground cord; black wide jaw crocodile clip; stacking banana jack/10mm stud adaptor
- Mat includes 1 sewn-in pocket 89mm x 127mm
- Surface resistance 10E6-10E8 ohms per IEC 61340-2-3



681-1235 ESD Field Kit

IP65 Wall Boxes, Steel, Grey

- Steel, coated with an epoxy polyester powder coloured RAL7035 Grey, with a textured finish
- Complete with a galvanised steel backplate
- Gland plates are fitted top and bottom for easy cable entry
- The door can be hinged either side simply by inverting the box



746-7352 400 x 300 x 200mm

842-8447 400 x 500 x 300mm

775-5312 300 x 400 x 210mm

775-5338 600 x 400 x 210mm

Heavy Duty Foot Switch

- Contact rating 20A 125-250Vac
- Full Shield
- "Alert Orange" cast iron body and pedal with sturdy aluminium shield for added protection
- Rated to IP56
- M20 cable entry
- 3 holes for rigid mounting to floor to equipment



116-849 Cast Iron Momentary SPDT 20 A @ 250 V ac 250V IP56

Crimp Insulated Terminal Kit

- This crimp tool / terminal kit comprises a dual purpose hand crimp tool and 500 insulated crimp terminals in 20 styles all contained in a tough, resilient polypropylene case



109-797 Insulated Terminal

Ratchet Crimping Tool for Terminal, 0.5 → 6.0 mm²

- Non-slip main handle and low friction moving handle ensure a comfortable hand grip
- Provides two-hand grip in the final phase of crimping, increasing comfort and productivity
- Full cycle crimp mechanism to ensure consistent, reliable crimp



533-279 0.5 → 6.0 mm²

LBC Fuse Kit

- Assortment of 360 units, 5 x 20 fuses
- Fast, time-delay or semi-timed action



611-8955 5 x 20 mm assorted fuses

Medium Duty Clipper Foot Switch

- Contact rating 20A 125-250Vac
- Rugged cast iron housing with anti-skid base
- Twin version has divider bar to prevent accidental operation of both pedals simultaneously
- Ingress protection rating IP20



116-928 Cast Iron Momentary SPDT 20 A @ 250 V ac 250V IP20

Heavy Duty Unguarded Foot Switch

- Rugged high performing heavy duty foot switches
- Positive break contacts open in the event of contact weld or broken spring
- Average life expectancy 1x10⁶ operations
- Sealed to IP67



211-0698 Die Cast Aluminium Momentary NC/NO 6 A @ 500 V ac 230V IP67

Foot Switch Bellows for Air Operated Switch

- For foot or hand operation, moulded in PVC complete with bayonet action mounting plate and 2 m of PVC tube 3 mm bore, 6 mm O.D.
- Suitable for use with all air-operated switch elements



316-945 Foot/Hand Actuator

38mm Aluminium Steel Key Safety Padlocks

- Solid aluminium core with steel plastic covered shackle for best physical strength
- Body and shackle insulated against electric shock
- NANO-PROTECT™ shackle for superior corrosion resistance
- Intrinsically safe, key retaining
- Automatic locking for user convenience



805-5483 Red

805-5487 Yellow

805-5480 Green

Adjustable Cable Rack, 4 shelves in Steel

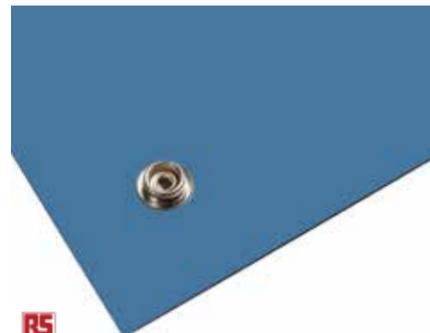
- For storing and dispensing reels of wire
- Supplied with 4 adjustable height position hanging rods
- Powder coated brown / sandstone finish
- Clip-together assembly - no tools required



374-1697 985mm (H) x 896mm (L) x 990 mm (W)

Blue Bench/Floor ESD-Safe Mat

- Thickness 3mm
- High quality dissipative vinyl top
- Deep cushioned dissipative under layer
- Conductive centre layer
- Good lay flat properties
- Fitted with 10mm stud



466-1643 1.2m x 600mm x 3.2mm

Black Glass-Fibre Reinforced Technopolymer Hand Wheel

- Revolving and folding handle options
- Zinc plated steel hub
- Hand-wheel material: Phenoplast
- Various sizes available
- Designed for applications in food, pharmaceutical and medical fields



161-2015 Hole Dia.10mm, depth 34mm

161-2016 Hole Dia.16mm, depth 34mm

161-2017 Hole Dia.20mm, depth 34mm

161-2010 Hole Dia.10mm, depth 25.5mm

161-2011 Hole Dia.12mm, depth 25.5mm

161-2013 Hole Dia.16mm, depth 25.5mm

161-2009 Hole Dia.15mm, Depth 22mm

Adhesive Dispenser for 50ml Cartridges

- Easy to use and can be cut to alter bead size Easy to clean
- Smooth even application
- Helical mixing baffle



503-379 50ml Cartridges

400 ml Aerosol Freeze Spray

- A powerful non-corrosive refrigerant for use as a rapid and safe method of cooling small components, particularly in electrical and electronic equipment.
- Ideal for use to locate faults, assess low temperature performance or to prevent damage during soldering



846-682 -50°C

Digital Thermometer

- Two Type K bead thermocouples supplied
- Reading hold function
- Dual thermocouple input
- Differential temperature (T1-T2)
- °C or °F display



123-3216 2 Input Handheld, K Type Input

ICM30R AC-DC Current Clamp Multimeter

- True-RMS reading
- 4000 Count digital display
- Auto-ranging
- Dual hall sensor
- Nickel-Steel alloy jaw mechanism



123-3252 Max Current 300A ac, 300A dc CAT III 300V

RS14 Handheld Digital Multimeter

- This great value, compact, autoranging multimeter is CAT III rated for 600 V
- It has a robust double-moulded plastic housing and oversized high contrast 2000 Counts LCD display



123-1938 10A ac 600V ac 10A dc 600V dc

IDM72 Handheld Digital Multimeter

- The highest measuring category allows measurements direct at the source of the low voltage installation
- Features optical interface for transmitting measuring results to PC's



123-3242 10A ac 750V ac 10A dc 1000V dc

IT-1 Infrared Thermometer

- Large-scale LCD display infrared thermometer
- Single point laser sighting
- Integrated non-contact AC voltage detection 60 V ac → 600 V ac with LCD indication
- Ultra bright white LED torch
- Single AAA size battery operation
- Pocket clip designed for easy carrying



123-3250 +500 °C, +932 °F

Digital Caliper

- Clear LCD display
- Stainless Steel construction
- Origin setting
- Switchable On/Off
- Thumbwheel for fine adjustment
- Knurled locking screw



841-2518 0.0005 in, 0.01 mm ,Metric & Imperial

LED Warning Light Modules

- 15 flash patterns
- 3 × LED light
- Waterproof with sealed for life electronics
- IP67 rated ingress protection
- Multiple units can be linked for synchronised / alternate flash
- EMC approved (ECE R10)



907-5959 Red
907-5968 Green
907-5955 Amber

Miniature Xenon Beacons

- Have a low or standard profile and are available as a 1W, 2W or 5W version
- Ideal for a broad range of vehicular and industrial applications, particularly where protection rating or limited space is an issue
- Sealed units offering IP67 protection
- Supplied fitted with either an amber or red lens



235-900 Red
235-916 Amber

Reed Switches

- Pre-wired with 0.7m PVC leads
- Blue cast zinc case with slotted fixing
- Breakdown volts: 340ac/500dc
- Rating IP64
- Dimensions: 80 × 19 × 9.6mm (switch)
38 × 25 × 9.6mm (magnet)



339-746 Rectangular 250V, NO, 3 A
339-752 Flat 400V, Changeover, 2 A

Mini Turbine Flow Transducer

- Its totally non-metallic wetted components makes this the ideal choice for the metering of aggressive chemicals including ultra-pure water
- The standard inlet tubes are barbed to accept 8mm hose sizes
- The bearings are made of sapphire for long life and reliability, the body is moulded PVDF as standard and the 'O' ring seal is typically Viton®



508-2704 Cable, Pulse, 4.5 → 24 V

On/Off Temperature Controller

- 35 × 77 mm size
- J Thermocouple sensor input
- Single set-point
- Zero point shift
- Probe failure setting, output status can be set to On, Off or pulse
- 0000 or 000.0 units display



124-1051 230 V ac Supply

3 Pole Panel Mount Non Fused Isolator Switches

- All switch ratings at AC22
- RoHS compliant
- Maximum panel thickness 3mm
- Depth behind panel 102min/117max mm
- Dimensions 72(H)×50(W) mm
- Actuator dimensions 64×64×32mm



466-148 25 A, 11 kW, IP65
466-144 40 A, 15 kW, IP65
466-138 63 A, 22 kW, IP65

Microcompact Analogue/ Analogue Converter

- DIN rail mounting Microcompact analogue/analogue converters for industrial applications
- 3-way isolation
- LED indicator
- Screw/spring terminals
- IP 20 protection



794-8558 4 → 20 mA Input, 4 → 20 mA Output

Off Delay Time Delay Relay- 17.5 mm

- 17.5 mm width
- DIN Rail mounting
- Off delay timing function
- Integrated dual voltage
- LED indications for power and relay status
- Wide supply voltage range
- IP20 (terminals), IP40 (enclosure) protection



896-6822 Screw, 0.3 s → 30 h, SPDT, 1 Contacts, SPCO, 24 V ac/dc, 240 V ac

PNP Inductive Sensor

- IP67 Nickel brass housing with PBT sensing face
- Non embeddable
- LED indication
- Operating temperature range -25 to +75°C
- Short circuit, overload and reverse polarity protection
- 2m PVC Pre-wired
- 10 → 30 V dc supply voltage



701-8253 M12 × 1, 44mm Length
701-8266 M18 × 1, 48mm Length
701-8216 M30 × 1.5, 51mm Length

Proximity Switch Test Units

- RS Pro proximity switch tester is designed to test three wire DC proximity switches
- Capable of testing inductives (metal sensing), capacitives, photoelectrics or ultrasonics
- The Unit is fitted with two 9 V batteries ready to use



839-9875 18 V dc 35 mA

Rope Pull Kit, For 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
- Two thimbles, collar clamps and "D" shackles are provided for securing each end of the grab wire to the safety switch



239-6763 10m

RSAC Inverter Drive 0.75 kW with EMC Filter

- Perfect in situations where a robust and sleek design is necessary
- Can be used in various applications including conveyors, HVAC and pumps



136-3108 1-Phase In, 115/230 V ac, 3.6 A, 0 → 120Hz Out
136-3124 3-Phase In, 460 V ac, 2 A, 50 → 60Hz Out, IP65 (Food Grade)



FUTURE-ORIENTED COMMUNICATION

Making setting up machine networks as easy as child's play

Seamless Ethernet-based data exchange from field level to office applications is one of the central challenges that Industrie 4.0 presents to future machine networks. As a communication specialist, Phoenix Contact therefore offers appropriate solutions that are not only comprehensive, but also easy to handle, secure and ready for the future (lead). Whether man or machine, one thing is certain: without communication, nothing works. However, in the practice, it frequently happens that participants do not understand each other, or not correctly. Reasons include many participants speaking at once, different languages, or complex ways of expressing themselves. It is a fact that misunderstandings can easily cause errors with unforeseeable consequences. Therefore, a uniform language and regulated communication are fundamental prerequisites for trouble-free information exchange between all participants. And that also holds true for the data exchange in machines and systems. In the past, the amount of Ethernet-capable components was still relatively limited, but thanks to the universal Ethernet communication, their number is continuously increasing. As a result, the risk of unwanted data traffic on the network also increases. Unauthorized devices that are connected or loops that are accidentally established can interfere with the production process. If the user then additionally needs special

protocols, such as PROFINET or EtherNet/IP™, the devices used have to meet special requirements to safeguard reliable data exchange. Technology trends such as cloud-based solutions, IT security, the use of smart devices, or the possibility of secure remote maintenance also influence the network communication. For the machine builders, this means that they constantly have to plan and service larger networks that can be supplemented with new technologies. And the whole thing has to stay manageable for both their own and the customers' employees.

Uniform operating philosophy

To meet these demands, new device types are used in the machine networks, in addition to switches that connect the components and control the data transmission. For example, to connect mobile end devices or transport systems to the automation network, wireless modules are used. Security components are increasingly used to ensure safe integration of the machines into the production network. They also allow encrypted – and thus secure – remote access to the machines. In machine building, the international competitive pressure is high. To meet the customers' demand for devices that are easy to handle, it makes sense to source all the required network components from a single manufacturer. This allows for a uniform operating philosophy and creates scope for

price negotiations. With the FL Switch 2000, FL WLAN 1100, FL mGuard und TC Cloud Client product families, communication specialist Phoenix Contact therefore provides the optimal solution for the special requirements of modern machine networks (Fig. 1).

Diagnosable high-availability networks

In the past, unmanaged switches usually served as the interface between network participants in machine building. The reasons included their low price and easy startup. However, these devices cannot meet the demands that arise from the growing communication needs of the constantly increasing number of network participants. For example, unmanaged switches have no



Figure 1: The extensive Phoenix Contact product portfolio encompasses all components needed for setting up a machine network

mechanisms for network diagnostics or reducing the data load. Therefore they can only be used to a limited extent in modern machine networks.

On the other hand, intelligent switches have precisely these functions. Thanks to optimally matched functionality, they combine the benefits of easy-to-use unmanaged devices with the powerful capabilities of the managed switches. The new FL Switch 2000 product family of Phoenix Contact additionally supports redundancy mechanisms for loop suppression, as well the essential functions of the PROFINET and EtherNet/IP™ transmission standards. The innovative Unmanaged Mode ensures user-friendly handling. It allows the device to be operated as an unmanaged switch, while the management functions for stabilizing the network are active in the background. With the FL Switch 2100 models, it is additionally possible to set up machine networks for gigabit communication.

Reliable wireless technology

The trend to integrate mobile devices and driverless transport systems into the machine network makes wireless data communication essential, for example using WLAN. To ensure that the data is reliably transmitted to the recipient, an access point that transmits a WLAN signal should be installed at the respective machines. Usually, the access point is installed in the control cabinet, and at least two antennas are mounted on the machine.



Figure 2: The compact FL WLAN 1100 wireless module / access point can be used to integrate mobile devices into the network

effort by single-hole mounting – even as a retrofit. The two antennas integrated into the access point support all customary WLAN standards (IEC 802.11a/b/g/n) and frequencies (2.4 GHz and 5 GHz), as well as MIMO antenna technology (Multiple Input Multiple Output). This ensures fast and reliable data transmission.

Secure remote access

Connecting the machine to the production network, integration into a cloud-based solution, or remote maintenance by the machine builder: regardless of the application, secure and therefore encrypted communication is crucial. The remote maintenance modules of the TC Cloud Client and FL mGuard product families ensure that the service personnel can connect to the machines and systems remotely via the Internet. Depending on what is needed, this connection is either established via the operators' networks, or via the global 4G LTE mobile network (Fig. 3). The mGuard Secure Cloud makes it possible to set up a scalable VPN infrastructure with encryption by means of the IPsec security protocol. This safeguards the confidentiality, authenticity and integrity of all exchanged data. For secure connections between the machine and the production network, the FL mGuard security appliances additionally provide extensive firewall functions that protect the machine network against unauthorized access (Fig. 4).

Easy configuration

Many machine builders prefer to use devices in their networks that can be set up as easily as possible. To avoid the additional time and costs involved in configuring more complex components, machine builders make conscious decisions to forfeit the advantages of a robust, diagnosable network. As mentioned above, unmanaged switches with plug-and-play capabilities are frequently used. These simply have to be



Figure 3: The mGuard Secure Cloud allows secure remote maintenance of machines and systems

connected to a power supply and the network. No settings have to be configured.

To minimize the configuration effort even for components with management functions, without forfeiting their many benefits, the new Phoenix Contact devices have been optimized for machine building applications and are easy to configure. In addition to the configuration options usually offered, such as web-based management in a browser and SNMP (Simple Network Management Protocol), the switches of the 2000 product family and the TC Cloud Client are equipped with an SD card. With the card, the configurations created can be replicated as often as needed. And if the user needs to replace a defective component, the extensive work involved in the initial configuration need not be repeated for the replacement device. The wireless modules of the FL WLAN 1100 and FL Switch 2000 product families additionally offer the option of configuration by means of a command-line interface (CLI).

Transparent network management

Larger and larger automation networks – this trend is overtaking an increasing number of machine builders' ability to manage their networks. Additionally, they complain about the high amount of time involved and the resulting costs. Therefore many companies are looking for a solution to simplify network management. With the FL Network Manager, Phoenix Contact offers a new software tool that encompasses all the important functions for managing switches as well as WLAN and security components – from initial device configuration and monitoring functions during live operation to user-friendly configuration and firmware management.

In the past, it was necessary to perform firmware updates on each individual device. With the FL Network Manager, it is now possible to update all components simultaneously. Device configuration in the network is just as easy. All configuration files can be saved locally in a single step, and be loaded on a (replacement) device if needed. Integrated BootP/DHCP and TFTP server functions eliminate the need to use several different tools to configure device parameters. The FL Network Manager thus combines all the important management functions for an automation network into one transparent tool.

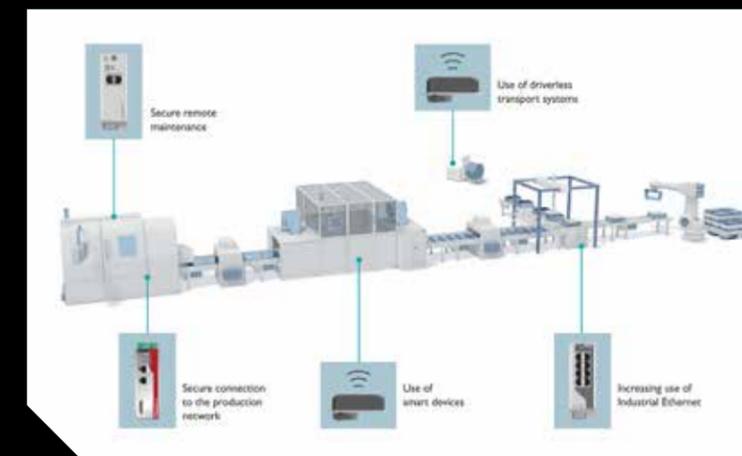
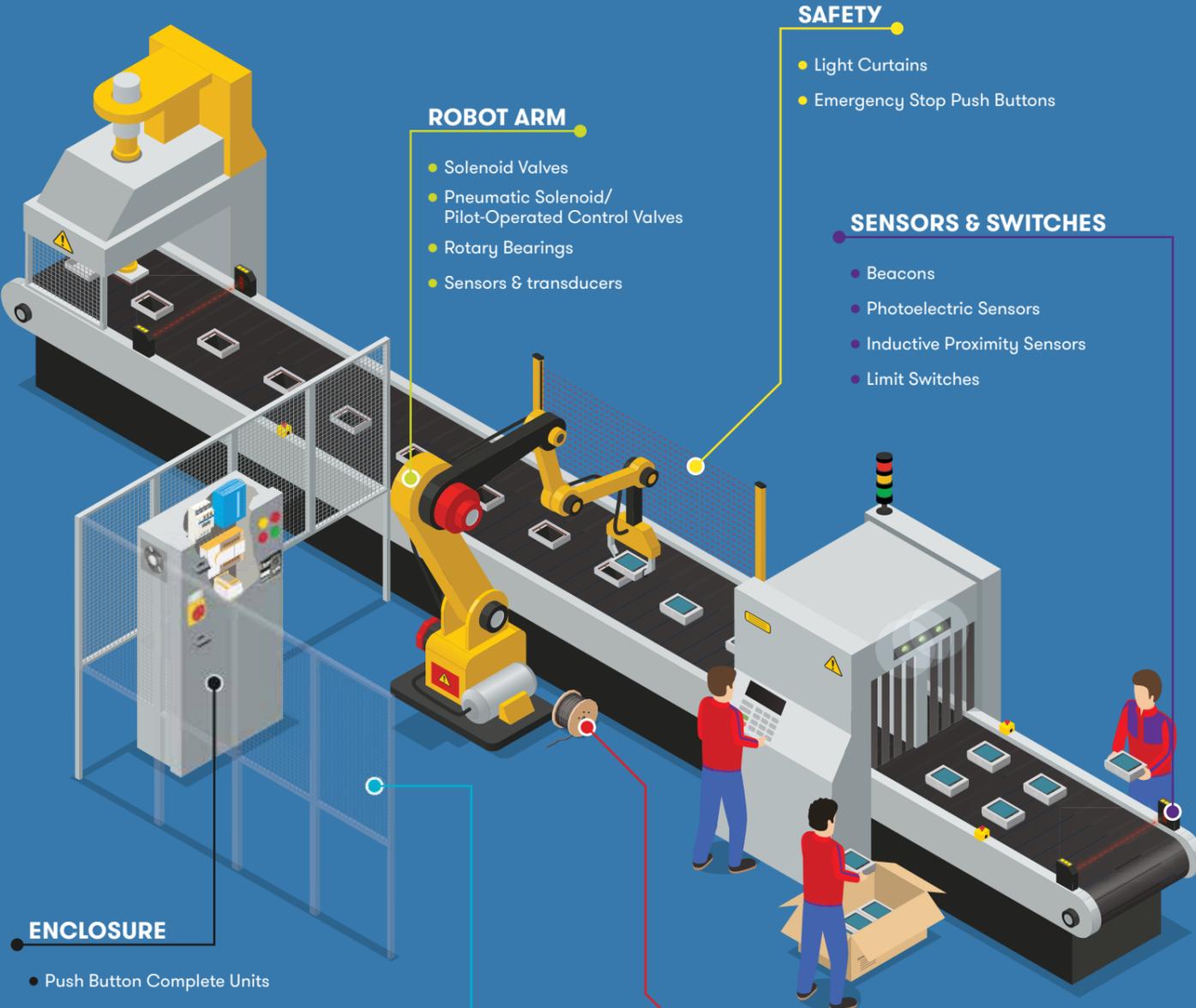


Figure 4: Remote maintenance of machine networks with smart devices

Industrial Automation – it's more than just robots

Hundreds of complex components go into creating remarkable machines like robotic arms and smart production lines. We have an extensive range of products for all your automated applications, with all the industry-leading brands. Whether you're looking to optimise productivity or want to improve safety around your machines, we have everything to keep your processes running.



ROBOT ARM

- Solenoid Valves
- Pneumatic Solenoid/ Pilot-Operated Control Valves
- Rotary Bearings
- Sensors & transducers

SAFETY

- Light Curtains
- Emergency Stop Push Buttons

SENSORS & SWITCHES

- Beacons
- Photoelectric Sensors
- Inductive Proximity Sensors
- Limit Switches

STRUCTURE

- Tubing & Struts

CABLING

- Multicore Industrial Cable
- Hookup & Equipment Wire
- Cable Glands
- Heat-Shrink & Cold-Shrink Sleeves
- Cable Ties

ENCLOSURE

- Push Button Complete Units
- Touch Screen HMI Displays
- DIN Rail & Panel Mount Power Supplies
- Contactors
- General Purpose Enclosures
- Non-Latching Relays
- Safety Relays
- Inverter Drives
- Time Delay Relays
- Solid State Relays
- Logic Modules
- Non-Fused DIN Rail Terminals
- Signal Conditioning
- DIN Rails



32-Tone Sounder Beacons

- IP66 rated
- 3 alarm stage options
- 3 levels of volume control
- Automatic synchronisation
- UL94V0 flame retardant ABS case
- 0.25J xenon tube, 1 flash per second
- Polycarbonate lens



192-9485 230 V ac SON4AC230R/R
192-9479 24 V dc SON4DC24R/R

Sonora ST LED Beacon

- Multiple configurations of Xenon and LED beacons
- Internal cable loom and termination PCB simplifies installation
- Common negative/neutral supply minimises cabling



772-0887 Amber LED, 230 V ac ST-L101HAC230A

10-Tone High Output Sounder Beacons

- 2-stage alarm
- Automatically synchronising
- Reverse polarity diode protection
- Xenon tube
- 4 gland knockouts in side and back



617-3558 Red Xenon, 24 V dc SONFL1XDC24R/R-H
617-3592 Red Xenon, 230 V ac SONFL1AC230R/R
617-3609 Amber Xenon, 24 V dc SONFL1XDC24W/A-H
617-3586 Amber Xenon, 230 V ac SONFL1AC230W/A

32 Tone BExCS Sounder/Beacon

- Rated for Zone 1 & 2, Gas group IIB
- 3-stage alarm with auto-synchronised output (or alternating flip-flop)
- Good resistance to humidity and salt spray environments
- Can be connected from a single supply for simultaneous, or separate supplies for independent operation of the sounder and beacon
- UKOOA/PFEER compliant



623-3307 24 V dc, ATEX BEXCS11005D24-DC-RD

Alarm Sounder with Xenon Beacons

- Can be wired with sounder and beacon operating separately or together
- 3 alarm stage options
- Volume control
- Automatic synchronisation
- UL94V0 flame retardant ABS case and polycarbonate lens
- Tube life: >5million flashes



223-1290 32-Tone, 105dB, Red Xenon, 230 V ac, IP65 AL105NAC230R/R
615-7130 45-Tone, 112dB, Amber Xenon, 24 V dc, IP66 AL112NDC24R/A

10 Tone Electronic Sounders

- 2-stage alarm
- Automatically synchronising
- Reverse polarity diode protection
- 4 gland knockouts in side and back
- 100dB at 1 Metre
- IP66 rated



617-3700 Red, 10 → 30 V dc SONF1DC24R
617-3693 Red, 18 → 30 V dc SONF1DC24R-H
617-3716 White 10 → 30 V dc SONF1DC24W

Intrinsically Safe IS-Minialerts

- Rated for Zone 0,1 & 2, Gas group IIC
- 3 stage alarm with auto synchronised output
- Array of 6 high intensity LEDs
- Single or double flash @ 1Hz or 2Hz
- Input overload and reverse current protection
- Operating temperature: -40 → +60°C
- 18-28Vdc



615-6907 Amber LED IS-MC1-R/A
615-6890 Red LED IS-MC1-R/R

45 Tone Electronic Sounder

- 3-stage alarm option
- Automatic synchronisation on multi-sounder systems
- 24V version can be used in fire systems
- UL94V0 flame retardant ABS case
- UKOOA/PFEER compliant



223-1391 24 V dc, 126dB at 1 Metre AI21DCR

32 Tone High Output Marine Sounders

- UL94V0 flame retardant ABS case
- 3 alarm stage options
- Automatic synchronisation on multi-sounder systems
- Stainless steel mounting brackets



237-8872 10 → 30 V dc, 126dB at 1 Metre MAI21DC24G
237-8888 230 V ac, 126dB at 1 Metre MAI21AC230G

Find everything for your automation needs at

au.rs-online.com

For latest stock availability & pricing visit hken.rs-online.com



Flashguard Led Beacons

- Have xenon flash tubes and are fitted with a diffuser for greater visibility and spread of light
- Compact, ultra-modern sleek appearance
- Surface or box mount with rear entry cable
- Weatherproof to IP67 (with cable connector)
- White, high-quality polycarbonate housing
- Vandal-resistant safety locking mechanism



klaxon

309-5770	Amber, 12 V dc, 24 V dc	OBS-0054
309-5887	Amber, 230 V ac	OBS-0018
309-5764	Red, 12 V dc, 24 V dc	OBS-0052

Red/Black Mono 72 Sirens

- High output siren sound (120 dB)
- Rugged construction for use in all environments
- Weatherproof to IP65
- Mounting bracket for ease of installation



klaxon

422-315	230 V ac	SLA-0002
907-6337	110 V ac	SLA-0001

Yellow Super M Siren

- High output siren sound (127 dB)
- Separate mounting bracket for easy installation
- Maximum operation 15mins every 2 hours
- Weatherproof for use both indoors and outdoors
- Frequency: 1600 Hz



klaxon

907-6343	230 V ac, 127dB at 1 Metre	SLD-0002
-----------------	----------------------------	----------

Sonos Sounder Beacons

- IP65 rated (deep base versions only)
- Operation type: continuous or synchronised
- Wire-to-base
- Tone and volume can be pre-set or adjusted off-base
- Sounder locks into base
- 17-60Vdc



klaxon

489-4966	Red	18-980501
489-5054	Amber	18-980504

Nexus Sounder & Beacon Combinations

- 50 tones and volume control
- 2nd and 3rd stage alarms
- High power 5 joule xenon beacon
- Separate control of sounder and beacon
- Fire retardant red case
- IP66 rating



klaxon

539-4710	Amber, 10 → 60 V dc, 110dB at 1 Metre	PNC-0015
539-4619	Amber, 10 → 60 V dc, 120dB at 1 Metre	PNC-0004
539-4647	Red, 110 V ac, 230 V ac, 105dB at 1 Metre	PNC-0005
539-4653	Amber, 110 V ac, 230 V ac, 105dB at 1 Metre	PNC-0007

Nexus Red 64 Tone Electronic Sounders

- 3 alarm stages
- First-fix, wire to base technology
- IP66 rated
- Volume control for greater flexibility – 20 dB
- 64 tones
- 5 cable entries



klaxon

539-4552	10 → 60 V dc, 105dB at 1 Metre	PNS-0001
907-6306	24 → 48 V ac, 116dB at 1 Metre	PNS-0020

Vertical Mounted Siren

- High 125dB(C) sound output
- 1000m range @ 60dB
- 20 mins on / 20 mins off rating
- Cast aluminium base, stator and cover
- Glass-filled Noryl rotor



klaxon

289-2003	230 V ac/dc, 125dB at 1 Metre	SLC-0002
-----------------	-------------------------------	----------

Sonos White 32 Tone Electronic Sounder

- IP65 rated (deep base versions only)
- Operation type: continuous or synchronised
- Available as wire-to-base or wire-to-terminal
- Sounder locks into base
- Shallow or deep base option
- Tone and volume can be pre-set or adjusted off-base



klaxon

489-5010	8 → 35 V dc, 106dB at 1 Metre	PSS-0039
-----------------	-------------------------------	----------

Xenon Series Flashing Beacon

- Reduced height Xenon beacons
- Reverse polarity protection
- Flash rate 1Hz
- 12/24Vdc



klaxon

366-1181	Red	OBS-0040
309-5972	Amber	OBS-0043

PZ 6/5 Bootlace Ferrule Tool Kit

- 3100 assorted bootlace ferrules
- Convenient storage compartments
- Handles for portability
- Crimping and stripping tools included



Weidmüller

425-8770	3100 wire end ferrules; collars from 0.5 to 6mm²	CRIMP-SET PZ 6/5 -9028740000
-----------------	--	------------------------------

WPE Series ATEX Earth Terminal Blocks

- Screw Down Termination
- Holds different wire sizes
- Protective insulation
- Screw mounted connection
- Suitable for 'Top Hat' DIN Rail and manufactured from nylon 6.6



Weidmüller

193-124	30 → 12 AWG, 60mm Length, 2 Way	WPE 2.5 -1010000000
528-0217	10 → 22 AWG, 56mm Length, 2 Way	WPE 4-1010100000
193-130	20 → 8 AWG, 56mm Length, Single Way	WPE 6 - 1010200000

WDU Series ATEX Feed Through Terminal Blocks

- Terminals available in a range of colours
- 800V Voltage Rating
- Screw Down Termination
- Single Level

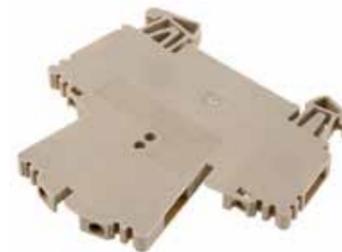


Weidmüller

425-190	30 → 12 AWG, Beige	WDU 2.5 -1020000000
425-207	26 → 10 AWG, Beige	WDU 4 - 1020100000
425-213	26 → 8 AWG, Brown	WDU 6 -1020200000

WDK2.5/PE Double Deck Terminal Blocks

- The 'W' series screw clamp terminals are suitable for 'Top Hat' DIN Rail
- Manufactured from nylon 6.6 which has a continuous temperature rating of 120°C (180°C short term)
- Self-extinguishing to UL94V-0 and free from cadmium and halogen



Weidmüller

779-598	400 V, Screw Down, 30 → 12 AWG, Brown	WDK 2.5 -1021500000
----------------	---------------------------------------	---------------------

PRO ECO DIN Rail Power Supplies

- Tricolour LED displays that allows the operators to analyse statuses and errors while commissioning and operation
- Can be used in either automation technologies or series machine construction
- Available in nine separate 24 V dc variants



Weidmüller

923-6501	120W, 24V dc/ 5A	1469480000
923-6504	240W, 24V dc/ 10A, 80 → 370 V dc, 85 → 264 V ac	1469490000
923-6514	240W, 24V dc/ 10A, 320 → 575 V ac, 450 → 800 V dc	1469540000
923-6508	480W, 24V dc/ 20A	1469510000

Stripax Wire Stripper

- Designed to strip PVC-insulated single or multi-strand wires measuring 0.08 → 6 mm² (AWG 20 → 12)
- To strip multi-core cables, ribbon cables and double-insulated cables without the risk of damaging conductors



Weidmüller

425-8843	0.08 → 10mm²	9005000000
-----------------	--------------	------------

FrontCom Micro® Front Panel Interface Sockets

- 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

741-7326	Cat6a RJ45, 2 Port, STP	IE-FCM-RJ45-C -1018790000
741-7332	Panel Mount, Type A USB 2.0, Receptacle	1018840000
741-7323	Cat6a 1 Way Straight Panel Mount RJ45	IE-FCM-RJ45-FJ-B -1018820000

Unmanaged Switches Fast Ethernets

- Unmanaged switches are the simplest active network component
- They use the basic standard protocols, such as auto-negotiation, auto-crossing, and flow-control and can automatically adjust to the different transmission speeds or connector wiring



Weidmüller

893-6792	5 × RJ45	1240840000
893-6796	8 × RJ45	1240900000

PZ6 Roto Ferrule Kit

- Supplied in a convenient and robust storage case with carrying handle



Weidmüller

425-8742	1 Piece	CRIMP-SET PZ 6 ROTO L -9028680000
-----------------	---------	-----------------------------------

IGUS Series 07 Energy Chains

- High quality hard wearing material (Igmud G)
- Easy to shorten and extend lengths
- Fast installation and maintenance
- Smooth running
- Linked lid ensures sections are not lost
- Chain supplied in 1m length



202-9019	W27 mm x D15mm	0720.038.0
202-9025	G 27 x 15mm Mounting Bracket	060.20.12
741-7556	27mm Mounting Bracket	060.20.12PZ

IGUS Series 07 Energy Chains

- Zipper-fast opening and closing
- Small pitch for low-noise and smooth operation
- For high acceleration
- Mounting bracket with integrated strain relief



215-0961	W22.5 mm x D15mm	0716.038.0
485-0001	G 22.5 x 15mm Mounting Bracket Set	060.16.12

IGUS Series 10 Energy Chains

- Large pins and double stop dog for superior life and long unsupported length
- Mounting bracket with integrated strain relief
- Dirt repellent exterior
- Interior separation available



486-8686	W36 mm x D23mm	10.025.038.0
741-7569	35.5mm Cable Trunking Mounting Bracket	1025.34PZ

IGUS Series E14 Energy Chains

- Limited torsion tolerance
- Very easy to fill - ideal for harnessed cable assemblies
- Limited torsion tolerance
- Small pitch for low-noise and smooth operation



236-4902	W62 mm x D25mm	E14.4.048.0
236-4918	35 x 61mm Cable Mounting Bracket Set	114.4.12PZ

IGUS Series 15 Energy Chains

- High quality hard wearing material (Igmud G)
- Easy to shorten and extend lengths
- Fast installation and maintenance
- Smooth running
- Linked lid ensures sections are not lost



202-9053	W36 mm x D24mm	15.2.038.0
215-1065	35.5 x 23mm Cable Mounting Bracket Set	102.12PZ

Betaduct Black PVC Closed Slot Cable Trunking

- Ideal for use in cabinets and control panels
- Snap-on lid
- Closed slots, height (H), width (W) and pitch (P) as shown
- Pre-punched fixing slots to DIN 43659 for ease of chassis mounting
- Self extinguishing PVC to UL94-V0 flammability rating
- Suitable for temperatures -15 to +60° C



541-141	W50 mm x D50mm, L1m	8732
544-342	W15 mm x D15mm, L1m	8702

Betaduct Grey PVC Open Slot Cable Trunking

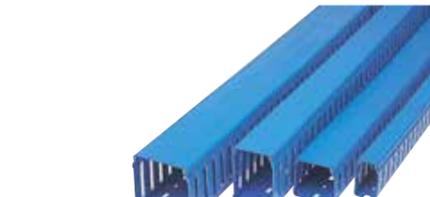
- Ideal for use in cabinets and control panels
- Snap-on lid with non-slip beading on widths 75mm and over
- Pre-punched fixing slots to DIN 43659 for ease of chassis mounting
- Self extinguishing PVC to UL94-V0 flammability rating
- Suitable for temperatures up to +60°C



762-1572	W25 mm x D75mm, L1m	7840000
762-1578	W25 mm x D50mm, L1m	7870000
762-1590	W37.5 mm x D75mm, L1m	7760000
762-1610	W50 mm x D25mm, L1m	7850000

Betaduct Blue PVC Open Slot Cable Trunking

- Ideal for use in cabinets and control panels, blue open slot trunking is used to indicate intrinsically safe wiring
- Snap-on lid with non-slip beading on widths 75mm and over
- Pre-punched fixing slots to DIN 43659 for ease of chassis mounting
- Self extinguishing PVC to UL94-V0 flammability rating



762-1613	W25 mm x D50mm, L1m	6870000
762-1617	W50 mm x D50mm, L1m	6880000

Betaduct Black PVC Open Slot Cable Trunking

- Ideal for use in cabinets and control panels, blue open slot trunking is used to indicate intrinsically safe wiring
- Snap-on lid
- Pre-punched fixing slots to DIN 43659 for ease of chassis mounting
- Self extinguishing PVC to UL94-V0 flammability rating



599-011	W25 mm x D50mm, L1m	8870000
599-027	W50 mm x D50mm, L1m	8880000
599-005	W25 mm x D37.5mm, L1	8860000

SITRANS Series Level Probe

- IP67/8 (up to 2m for 24hrs) design
- 2-wire loop-powered intelligent HART ultrasonic transmitter
- Level, volume and flow measurement
- Built-in temperature compensation



493-7186	Transducer material: 6 meter (20 ft)	7ML5221-1BB11
493-7192	Transducer material: 12 meter (40 ft)	7ML5221-1DB11

IoT2020 Educational Intelligent Gateway

- The IOT2020 gateway is compatible with most Arduino sketches that can be uploaded directly from the Arduino IDE
- Many other programs can be compiled and or run under Yocto Linux on the used controller X1000 SOC (X86)
- Third-party hardware such as PLCs and sensors from various different brands can be integrated via Ethernet or Serial (via USB adapter) using many available and open protocols including Modbus, Profinet, REST or MQTT



124-4037	CPU: Intel Quark x1000 (x86 400 MHz)	6ES7647-0AA00-0YA2
-----------------	--------------------------------------	--------------------

PLC CPU Starter Kit

- Complete PLC S7-1200 Starter Set with HMI Series KP/KTP
- CPU 1212C AC/DC/RLY Input simulator
- KTP400 basic
- SIMATIC STEP 7 basic in the TIA portal
- 2 m cord
- Documentation collection CD
- All contents supplied in systainer



828-5259	85 → 264 V ac	6AV6651-7KA01-3AA4
-----------------	---------------	--------------------

Voltage Monitoring Relays with DPDT Contacts

- Wide voltage range versions reduce inventory stock levels
- Variable settings for over-range, under-voltage or window monitoring
- Delay times and reset switch
- Actual value and fault types are permanently displayed



518-7297	Digital monitoring, 3 Phase, 160 → 690 V ac	3UG45131BR20
518-7174	Analog monitoring, 3 Phase, 320 → 500 V ac	3UG46151CR20
518-7275	Analog monitoring, 3 Phase, 160 → 690 V ac	3UG4511BP20

3RW40 Series Soft Starters

- May be integrated into a motor control system using other Sirius control gear products, e.g. 3 pole circuit breakers from the 3RV10 range (see Control Gear section)
- Two phase control, plus soft starting and stopping of three phase asynchronous motors
- Low power loss



420-520	45 kW, 200 → 480 V ac	3RW4046-1BB14
420-479	55 kW, 200 → 480 V ac	3RW4047-1BB14

Touch Screen HMI

- Clear process representation thanks to use of pixel-graphics displays
- Intuitive operation using Touch and tactile function keys
- Equipped with all the necessary basic functions such as alarm logging, recipe management, plots, vector graphics, and language switching



864-3967	400 Series, 4.3 in TFT 480 x 272pixels	6AV2123-2DB03-OAX0
864-3961	700 Series, 7 in TFT 800 x 480pixels	6AV2123-2CB03-OAX0

Contactors - 3RT10 Range

- Excellent reliability and are of extremely good quality
- Various NO/NC models available.
- Maximum switching voltage 690V
- Mechanical life 3 x 10⁷ operations



246-4440	80 A (AC3), 37 kW (AC3), 230 V ac Coil	3RT10451AP00
243-6704	12 A (AC3), 5.5 kW (AC3), 230 V ac Coil	3RT10171AP01
246-4276	25 A (AC3), 11 kW (AC3), 230 V ac Coil	3RT10261AP00

SIEMENS

SIEMENS

Magelis GTO Touch Screen HMIs

- TFT 65K colours for all screen sizes
- LED backlight enabling energy saving
- Optimized communication via Ethernet and serial link
- SD card slot



781-5893 7.5 in HMIGTO4310
781-5896 10.4 in HMIGTO5310

Zelio Logic Smart Relays

- LCD backlight display
- DIN Rail or panel mounting
- Incorporates real-time clock
- 4 Analogue output channels
- 10 ms cycle time



468-4242 16 x Input, 10 x Output With Display SR3B261BD
468-4438 8 x Input, 4 x Output With Display SR2B121BD

XPS Safety Relays

- Provides 3 N/O safety outputs
- Slim design (just 22.5mm width)
- Terminals accept cable up to 2.5mm²



360-4346 AF Configurable 24 V ac/dc Safety Relay XPSAF5130 Single or Dual Channel with 3 Safety Contacts
464-491 ATE Configurable 24 V dc Safety Relay XPS ATE5110P Dual Channel with 2 Safety Contacts and 4 Auxiliary Contact
447-4477 AC 24 V ac/dc Safety Relay with 3 Safety XPSAC5121 Contacts and 1 Auxiliary Contact

PM5000 LCD Digital Power Meter

- Three phases, neutral and ground can be monitored simultaneously
- Power quality measurements
- Data recording
- Graphical display, large characters and powerful backlighting



841-7774 92mm x 92mm, 3 Phase, ±0.5 % Accuracy METSEPM5320

Modicon M340 Power Supply Modules

- Data rate: 20kb/s to 1Mb/s (bus length dependent)
- Internal RAM capacity: 4Mb (3584kb of program memory); 256kb of data memory
- 3 communication ports integrated in the processor
- Mounting in low depth cabinet (<150mm)



148-032 24 V dc, 24V dc, 2.5 A 16.8W BMXCPS2010
148-010 100 → 240 V ac, 24V dc, 4.5 A 36W BMXCPS3500

Software V6.2 for use with Various HMIs

- Vijeo Designer Software delivered on DVD-ROM
- 7 languages selectable
- One license version



907-6491 Vijeo Designer Software VJSDNTG-SV62M

Multi Function Timer Relay

- 17.5mm width
- Multifunction
- Multi-range
- Multivoltage
- LED state indicator



791-2749 0.1 s → 100 h, SPDT, 2 Contacts, SPDT RE17RMMW

Modicon M221 PLC CPU

- M221 Book Logic Controller
- SD card slot and USB port
- 2 analog inputs and a broad choice of I/Os
- Run/stop switch and cartridge extension



806-6871 32 I/O TM221ME32TK

XB4 Complete Control Buttons

- Flush complete pushbutton Ø22 spring return INC "unmarked"
- NO Spring Return



330-8638 Green XB4BA31
330-8644 Red XB4BA42

IP67 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
- Brass actuator and Glass Filled Polyester case



317-847 DPDT, on - off - on AWTP1504
317-437 DPDT, on - on AWTN1504
199-318 DPDT, (on)-off-(on) AWTS1504
317-421 SPDT, on - on AWTD1504

Dynamic series K type thermocouple connectors

- Touch proof design Spring clamp connections
- IP20 protection
- Metal-locking mechanism
- Free-hanging and Panel Mount options



136-0880 Cable Mount socket 1-2299959-1
136-0881 Free hanging plug 1-2299960-1
136-0882 Panel Mount plug 2-2299960-1

Non-Latching Relay

- Dust proof flange mounting enclosure
- 1.6VA coil (cULus recognized)
- Form A (NO) VDE approved and UL recognized contact configuration
- Quick Connect terminations



909-8037 SPNO, Flange Mount, 240V ac Coil, 30 A 1649341-2

SPST Momentary Push Button Switches

- Provides a highly customisable vandal-proof product with premium look & feel
- Vandal-proof design with rear mounting jam nut
- Various pushbutton symbols including plain, ring & power logo



123-6063 SPST Momentary AV1910000Q04

Humidity/Temperature Transducer

- Full interchangeability
- High reliability
- Long term stability
- Suitable for 3 to 10 V dc supply voltage



893-7373 -40 → +85 °C ±5%RH HPP809A031

Relative Humidity Transducer

- Full interchangeability
- Compact size
- Very low temperature dependence
- Not affected by water immersion
- Suitable for 3 to 10 V dc supply voltage



893-7247 -40 → +60 °C ±5%RH Analogue, 3-Pin HPP805A031

Rocker Switches

- Easy snap in installation
- Black housing
- Illuminated rocker & various legend options



495-4377 DPDT, On-Off-On, Panel 1-1634201-2
718-2244 SPDT, On-Off-On, Panel PRASD3-16F-BB000
495-4232 DPDT, (On)-Off-(On), Panel 2-1634200-5

Pro-Crimper III Ratchet Crimping Tool

- PRO-CRIMPER III commercial grade hand operated crimp tools for crimping a wide range of terminals and contacts
- These commercial hand tools have a precision construction of durable high-carbon steel with extra strength pivot pins for long lasting performance
- Commercial grade crimp tools use SDE (Standard Die Envelope) technology



314-1362 0.5 → 1.5 mm² 58583-1
162-5717 28 → 16 AWG 58495-1

Universal Crimp Tool for Deutsch Connectors

- Adjusting screw includes jam nut
- Compatible with a wide range of Deutsch connector crimps
- To be used with solid contacts sizes 12, 16 and 20
- Compatible with connector ranges DT, HD10, HDP20 and HD30



425-973 Minimum 20AWG, Maximum 12AWG HDT-48-00

Raspberry Pi 3 Starter Kit

- With this kit, you'll be exploring, programming and experimenting with a Raspberry Pi within just a few minutes
- This Official Raspberry Pi 3 Starter Kit has everything you need. Just plug in the cables, attach to your TV or monitor and turn on



896-8119 Starter Kit Raspberry Pi 3 Starter Kit

Raspberry Pi 3 Model B+

- Raspberry Pi 3 Model B+ is the latest computer board from Raspberry Pi. It is a development of the previous Raspberry Pi 3 Model B, offering improved speed and functionality



137-3331 Raspberry Pi 3 Model B+ Raspberry Pi 3 Model B_Single

Raspberry Pi Compute Modules 3

- These modules are DDR2-SODIMM, mechanically-compatible System on Modules (SoMs) containing a BCM2837 processor System on Chip (SoC) with 1 Gbyte LPDDR2 RAM and 4 Gbytes eMMC Flash memory
- Extra input/output (I/O) interfaces in addition to the Raspberry Pi model A/B boards
- Compute Module 3 Lite - not fitted with eMMC Flash and SD/eMMC interface. But pins are available for the designer to connect their own SD/eMMC device



123-2013 I/O board Compute Module 3 I/O
123-2012 Lite Compute Module 3 Lite

Raspberry Pi LCD Touch Screen - 7 inch

- Multi-touch capacitive touch screen - supports up to 10 finger touches
- 7 inch display
- 800 x 480 pixel resolution at 60 frames per second (fps)
- 24-bit RGB colour
- 70 degree viewing angle
- Only two connections required



899-7466 7 inch Raspberry Pi Touchscreen

Official Raspberry Pi 3 cases

- Easy snap-fit assembly
- Range of case display/access options: fully closed, sides away, birds eye view
- Cut-outs of all connection points
- Plastic LED light protector
- MicroSD card cut-out
- Stick on rubber feet for case stability
- Suitable for both Raspberry Pi 3B and Pi 3B+



909-8132 Red & White TZT 241 AAA-01
909-8138 Black & Grey TZT 241 AAB-01

Raspberry Pi Plug In Power Supplies

- 2.5 A 5.1 V power supply
- 1.5 m cable
- Short circuit, over-current and over-voltage protection
- Low standby current consumption



909-8126 White TS875DV
909-8135 Black TS989DV

Tinkerkit Braccio Arduino Robotic Arm

- A fully operational robotic arm, controlled using an Arduino Board
- Designed for desktop use and is supplied in kit form so you can assemble it to your own requirements
- It can be used in several ways and is easily adapted. Pick up and move objects, mount a camera and track your movements in a video call or attach a solar panel and track the movement of the sun



111-3738 Robotic Arm T050000

Arduino Starter Kit with UNO board

- Use the Arduino Uno as a main board, with the board featuring an AVR ATmega 328 microcontroller
- Using the included Arduino Projects Book, you can gain step-by-step knowledge on code, circuits and bread-boards via 15 suggested projects



761-7355 Arduino Uno Starter Kits K000007

Arduino Uno

- ATmega 16U2 programmed as a USB to serial converter
- 14 digital I/O pins (6 can be used as Pulse Width Modulation (PWM) Outputs)
- 6 analogue inputs
- 16 MHz ceramic resonator
- USB connection
- Power jack
- ICSP header
- Reset button



715-4081 Arduino Uno A000066

Solid-state Multi-functional Timers

- A wide AC/DC power supply range greatly reduces the number of timer models kept in stock
- A wide range of applications with multiple operating modes, eight modes for 11-pin models and five modes for 8-pin models
- Ecological design with reduced current consumption



328-358 8-pin, 100-125V ac, 100-240V ac H3CR-A8 AC100-240/DC100-125
328-364 8-pin, 12-48V dc, 24-48V ac H3CR-A8 AC24-48/DC12-48
113-8134 11-pin, 100-125V ac, 100-240V ac H3CR-A AC100-240/DC100-125
113-8128 11-pin, 12-48V dc, 24-48V ac H3CR-A AC24-48/DC12-48

4PDT Non-Latching Relays

- 4PDT Contact configuration
- Hermetically sealed version of MY4
- Contact material: Ag
- Operating temperature range: -25 to +60°C
- Switching Current 3A



376-739 24V dc Coil, 3 A MY4H 24DC
376-745 120V dc Coil, 3 A MY4H AC110/120
827-8450 Relay Socket for use with MY Series PYF14A-E-US

Unshielded DC 3-wire Sensors

- Standard proximity sensors for detecting ferrous metals
- PBT sensing face material
- LED indication
- 3 wire DC, Unshielded
- 12 → 24 V dc supply voltage, IP67 Rating



479-2680 M12 x 1, NPN, 50mm Length E2AM12KN08WPC12M

Monitoring Relay with SPDT Contacts

- For accurate and reliable monitoring for industrial facilities and equipment
- Designed to bear greater resistance to inverter noise, suitable for monitoring 3-phase power supplies



819-3267 220 → 480 V ac K8AKPM2380480VAC
819-3258 115 → 240 V ac K8AKPM1200240VAC

Retro-reflective Photoelectric Sensor

- IP67 rated PBT housing with methacrylate lens
- PNP and NPN output configurations
- Light ON/dark ON selectable
- Small dead-band for sensing close targets
- PNP IP69K Block Style



374-2044 100 mm → 4 m Detection Range E3ZR86

XS5 Series Cable assembly

- Cat5e Performance
- PVC cable
- Overall braiding
- Individual foil shielding on each pair



123-5557 RJ45 to M12 4 Pin XS5W-T421-GMC-K

E5C2 On/Off Temperature Controllers

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



535-0710 K Type Thermocouple Input E5C2-R20K AC100-240 0-400
328-1094 RTD Input E5C2-R20P-D AC100-240 0-200

40mm Mushroom Head Emergency Buttons

- Direct opening mechanism to open the circuit when the contact welds
- Safety lock mechanism prevents operating errors
- Finger protection mechanism on Switch Unit provided as a standard feature
- Install using either round, or forked crimp terminals
- Non-lighted models IP65 (oil-resistant), lighted models IP65



746-7163 A22E Series Stop Switch A22E-M-11B
746-7185 A22Z-EG22 Shroud A22Z-EG22
746-7176 A22Z-EG2 Shroud A22Z-EG2

NB Series Touch Screen HMI

- Touch Screen Panel 70 inches with 65536 colours
- Long-life LED backlight
- 128 MB internal memory
- IP65 protection



821-1807 800 x 480 pixels NB7W-TW01B

M22 Series Pilot Lights

- Indicator Assembly with LED
- 12 - 24V, 22.5mm Cut-out
- Standards: IEC/EN60947



454-8607	Red	M22-L-R+M22-A+M22-LED-R
454-8584	Green	M22-L-G+M22-A+M22-LED-G
454-8562	Yellow	M22-L-Y+M22-A+M22-LED-W

EASY Logic Modules, 12 x Input, 6 x Output With Display

- Expandable using i/o modules
- Network interfaces for expandable devices, include Profibus, CanOpen, DeviceNet, Ethernet
- Programmable using drag and drop PC software
- Password security
- Real time clock



489-1456	100 → 240 V ac	EASY719-AC-RC
489-1478	24 V dc	EASY719-DC-RC

M22 22mm Enclosed Push Buttons

- Snap fitting modular range of 22.5mm control devices
- Up to six clip-together contact elements per actuator
- Stayput actuators convert with simple adaptor to spring return
- Flush, surface or rear mounting



399-4021	2NO/2NC, IP67	M22-I2-M1
399-4043	3NO/3NC, IP69K	M22-I3-M1

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
- High reliability through high MTBF > 500,000 h, long power failure bridging times > 20 ms, high voltage to 300 Vac



540-769	10A, Switch Mode	2866763
540-779	20A, Switch Mode	2866776
751-2581	5A	2320212

Thermal Transfer Printer 203dpi

- Maintenance free operation with proven thermal transfer printing technology
- Easy to control with the CLIP PROJECT software
- Printing of self-adhesive, non-sticky labels and shrink sleeves



137-2243	203dpi	803984
-----------------	--------	--------

PLC-PT Universal Interface Relays with Push-In Terminal (PIT)

- Can be used as either an input or an output device
- Connection of sensors/actuators is via modular terminal blocks
- Feather-light direct connection of conductors starting from 0.34 mm² without tools



711-2630	Push In, 24V dc	2900299
711-2649	Surface Mount, 24V ac/dc	2900300
711-2642	Surface Mount, 48V dc	2900301

xStart DILM 3 Pole Contactors

- Extremely durable, able to handle all demands and features immunity to interference and control circuit reliability-even when used in conjunction with PLCs
- Electronic power adjustment of the magnet system on the DC contactors enables very small frame sizes
- Three normally-open main contacts



493-0264	3NO, 25 A, 11 kW, 230 V ac Coil	DILM25-10(230V50HZ240V60HZ)
493-0179	3NO, 12 A, 5.5 kW, 24 V dc Coil	DILM12-01(24VDC)
493-0040	3NO, 9 A, 4 kW, 230 V ac Coil	DILM9-10(230V50HZ240V60HZ)

Titan Emergency Stop Stations

- Red/Yellow/Black, Pull to Reset 38mm Round Head
- Tamper proof according to ISO 13850/EN 418
- Supplied as a complete unit enabling easy installation for world wide application
- Can also be used for emergency switching off



399-3129	Emergency Button	M22-PV/KC11/IY
620-6169	Guard Ring	M22-XGPV

PKZM 690 V Motor Protection Circuit Breakers

- Designed for use with add-on contactor modules and accessories which provide isolation, short circuit and thermal protection
- DIN-rail mounting and part of the xStart family of control gear products
- A range of connection and wiring accessories are available to speed up assembly work and minimise wiring errors
- Various enclosure options are available



818-176	2.5 → 4 A, 60 kA	PKZM0-4
818-160	1.6 → 2.5 A, 60 kA	PKZM0-2,5
818-744	6.3 → 10 A, 60 kA	PKZM0-10

Industrial Surge Arresters

- Varistor-based device protection
- Can be used without separate backup fuse thanks to integrated overcurrent protection
- For single-phase power supply units
- Optical status indicator via LED
- Low voltage protection level of 1.5 kV
- Optical and mechanical status indicator



890-3752	1 Phase, ≤1.5 kV	2905229
890-3742	3 Phase, 2 kV,	2905340

800 V Feed Through Terminal Blocks

- 50 % less insertion force
- Direct plugging from 0.34 mm
- Actuation button for disconnecting conductors or wiring small cross sections from 0.14 mm
- Actuation button can be operated with any kind of screwdriver
- Compact design and front connection facilitate wiring in the smallest of spaces



687-9414	Push In Termination	3209510
-----------------	---------------------	---------

Industrial Ethernet Switch

- 5 TP RJ45 ports
- Automatic detection of data transmission speed of 10 or 100 Mbps (RJ45)
- Autocrossing function



648-5867	Ethernet Switch	2891152
-----------------	-----------------	---------

3 Pole Enclosed Non Fused Isolator Switches

- High impact thermoplastic enclosure to IP65
- Built in earth commoning block
- Lockable in the OFF position, with up to three padlocks



393-9765	NO, 63 A, 37 kW, IP65	P3-63/I4/SVB
393-9759	NO, 32 A, 15 kW, IP65	PI-32/I2H/SVB

FAK Palm switches 1N/O+1N/C

- 94mm diameter pushbutton
- Ingress protection to IP67
- Five M20 cable entries (one threaded)
- IEC418 tamperproof
- Impact resistant housing



225-8172	Emergency Button	FAK-R/V/KC11/IY
225-8166	Red Push Button	FAK-R/KC11/I
225-8150	Black Push Button	FAK-S/KC11/I

Multi Function Timer Relay

- 22.5mm wide, DIN rail mounting
- Wide range supply voltage
- Star-delta timer with 50ms delay in changeover
- Multifunction timers 10 time ranges, 9 functions



296-2376	0.05 s → 60 h	ETR4-70-A
-----------------	---------------	-----------

SUBCON-PLUS Series D-Sub Connectors

- 2.77mm Pitch 9 Way
- Have an integrated terminating resistor which can be activated externally by a slide switch, surge protection, a shielded ABS housing
- Can all be used with standard PROFIBUS cables with an outside diameter of 8mm (type A & B)



493-1964	Right Angle Male Screw	2708232
410-5373	Straight Male Screw	2744380

M12 10m Sensor/Actuator Cables for use with Sensor/Actuators

- Easy and safe: 100% electrically tested plug-in components
- Our standard: robust halogen-free PUR cable
- Convenient: increased machine availability thanks to quick and easy diagnostics



721-1077	4-position, Plug straight M12, on free cable end	1682993
721-1169	3-position, Free cable end, on Socket straight M12, with 2 LEDs	1694790
721-1175	3-position, Free cable end, on Socket angled M12, with 2 LEDs	1694428
721-1096	4-position, Plug angled M12, on free cable end	1694457

Universal Current Transformers

- Universal current measurement, no shunt required
- Compact dimensions also enable distributed use
- Variable mounting on DIN rail and mounting plate



715-7970	0 → 100A	2308027
-----------------	----------	---------

Pneumatic Manual Control Valves

- G 1/4, Aluminium 1/4 in G, -10 → +60°C
- Rotary slide valve design
- Can be fitted to MS4 and MS6 Series Modular units
- Non-reversible flow direction



FESTO

121-5648	Pneumatic	MS4-EM1-1/4
121-5649	Rotary Pneumatic	MS4-EM1-1/4-S

Filter Regulator

- 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

121-5654	1 1/4 Bar	MS4-LFR-1/4-D7-ERM-AS
-----------------	-----------	-----------------------

MS-LR Series G1/4 Pressure 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

121-5658	2100L/min, 0.3 → 4bar	MS4-LR-1/4-D5-AS
121-5659	1800L/min, 0.3 → 7bar	MS4-LR-1/4-D6-AS
121-5660	1700L/min, 0.5 → 12bar	MS4-LR-1/4-D7-AS

Solenoid valves VZWF, force pilot operated

- Can be operated with water, air and neutral media
- Possible to control high pressures with large nomin diameters
- Generally suitable for use in all cases where the medium can be vented downstream of the valve into the atmosphere or into a tank
- Operates from 0 bar



FESTO

163-7309	1/2 in	VZWF-B-L-M22C-G12-135-E-1P4-10-R1
163-7311	1 in	VZWF-B-L-M22C-G1-275-E-1P4-6-R1
163-7310	3/4 in	VZWF-B-L-M22C-G34-275-E-1P4-6-R1

Black Push Button Pneumatic Manual Control Valves

- Festo manually operated actuators to fit the SV series valves
- The valve actuators fit a standard panel cut-out size of 22.5 or 30.5 mm



FESTO

121-5862	Actuators to fit SV series valves	T-22-SW
122-8228	22.5mm ,IP40	N-22-SW

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

121-6000	Threaded, G 1/8 Male	AMTE-M-LH-G18
121-5999	Threaded, G 1/4 Male	AMTE-M-LH-G14
121-6202	Threaded, G 1/2 Male	AMTE-M-LH-G12
121-6203	Threaded, G 3/8 Male	AMTE-M-LH-G38

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

121-6291	Outside Dia. 4mm	PUN-H-4X0,75-SI
121-6293	Outside Dia. 6mm	PUN-H-6X1-SI
122-8470	Outside Dia. 8mm	PUN-H-8X1,25-SI
122-8459	Outside Dia. 10mm	PUN-H-10X1,5-SI

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

121-6294	Outside Dia. 6mm	PUN-H-6X1-SW
122-8457	Outside Dia. 8mm	PUN-H-8X1,25-SW
122-8460	Outside Dia. 10mm	PUN-H-10X1,5-SW

Pneumatic Manual Control Valves

- Manually operated valves for panel mounting with an actuator
- A reliable quick coupling system permits rapid assembly and disassembly of the actuator
- 3/2 or 5/2 way versions
- Panel mounted



FESTO

121-5860	3/2 M5 Metric, -10 → +60°C	SV-3-M5
121-5861	5/2 M5 Metric, -10 → +60°C	SV-5-M5-B

24 V dc Safety Relays

- Powerful and easy to use safety relays, suitable for all common types of safety applications



ABB

733-2391	RT9 24 V dc, Single or Dual Channel with 2 Safety Contacts	2TLA010029R0000
-----------------	--	-----------------

Safety Relays Single or Dual Channel

- Manual or automatic reset available
- Configured with information outputs
- Has four (4 NO) dual safety outputs
- Two outputs may be delayed up to three seconds to achieve a safe and "soft" stop
- LED status indication



ABB

733-2373	RT7A 24 V dc, 5 Safety Contacts	2TLA010028R2000
733-2351	RT6 230 V ac, 4 Safety Contacts	2TLA010026R0500

ACS150 Inverter Drives

- No complex programming, simple built-in keypad with long or short menu view Control via I/O. Built in 10 V ref for external potentiometer control
- Built in PID controller
- Built in Braking chopper as standard, converting kinetic energy to braking power (external resistor required)
- Accel and Decel ramp rates, fixed frequencies available to program



ABB

621-1284	1.5 kW with EMC Filter, 3-Phase In, 380 → 480 V, 4.1 A, 500Hz Out, IP20	ACS150-03E-04A1-4
621-1290	2.2 kW with EMC Filter, 3-Phase In, 380 → 480 V, 5.6 A, 500Hz Out, IP20	ACS150-03E-05A6-4

AF Range 4 Pole Contactors

- 25 A, 4 kW, 100 → 250 V @ 50/60 Hz Coil
- Built-in surge protection and do not require additional surge suppressors
- Manage large control voltage variations
- One coil can be used for different control voltages, and used worldwide without any coil change



ABB

711-6231	2NO/2NC	1SBL137501R1300
711-6206	4NO	1SBL137201R1300

SR2 Monobloc IP65 Wall Boxes

- Can be stacked vertically, allowing two switchboard sections completely separate from each other to be made inside a single structure
- Fitted with two cable entry flanges (one for the top and one for the bottom side) so that the whole enclosure is made reversible, offering the possibility of having door opening either on the right or left
- Wall mountable using a bracket or on the floor using a plinth (H 100mm)



ABB

768-5667	400 × 300 × 150mm	SRN4315K
768-5661	400 × 300 × 200mm	SRN4320K
768-5670	400 × 400 × 200mm	SRN4420K

PSR Soft Starters

- Wide rated operational voltage 208-600 V
- Rated control supply voltage 24 Vac/dc or 100-240 Vac
- Rated operational current 3-105 A
- Potentiometer settings
- Run signal relay on all devices



ABB

851-7644	37A, 18.5 kW, 600 V	1SFAB96110R1100
851-7654	85A, 45 kW, 600 V	1SFAB96114R1100

Dual Start/Stop Control Stations

- Robustly constructed, suitable for indoor or outdoor use
- Ingress protection to IP65 with metric conduit entries
- Supplied with contact block, additional contact blocks can be fitted
- Emergency stop complies with EN418



ABB

521-3677	107mm x 75mm x 141mm	1TVL211000P3112
-----------------	----------------------	-----------------

System M Pro S200 MCB Mini Circuit Breakers

- DIN rail mounting
- Complies with BS EN 60898
- Operating temperature range of -25°C to +55°C
- Standard 17.5mm width
- Max. operating voltage: 440Vac, 60Vdc



ABB

535-4138	1P, 6 A	2CDS271001R0064
535-4144	1P, 10 A	2CDS271001R0104
535-4166	1P, 20 A	2CDS271001R0204