

New product introductions  
from Avnet Abacus: Autumn 2021

# NPI solutions

Welcome to the NPI brochure from Avnet Abacus, our round up of the latest product and technology innovations to enhance your design. Click on the pictures to view full product details and datasheets.

## Featured manufacturers



AVNET<sup>®</sup> ABACUS

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## AMPHENOL ICC BERGSTAK® SECURE CONNECTORS



[VIEW PRODUCT DETAILS](#)

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The BergStak® secure connector contains one-time-use and multi-times-use solutions. Both solutions have unique shield design to protect signal transmission. The 3 row contact design with 1mm pitch improves board surface utilisation by 20%. The family can support high-speed data transmission up to 32Gb/s.

- EMI Shielding protects signals
- 3 row contact design with 37 position per row to achieve the space-saving solution
- Dual-beam receptacle contacts ensure more reliable connection
- Blind-mating feature benefits to mating process
- Modular design to support maximum 3 sets using together on one board

### Features

- EMI shielding
- Excellent protection of signals, no possible to probe. Suitable for the applications which need signal security
- High speed performance up to 32Gb/s
- Can be used in high-end computing and signal transfer applications in data communication telecommunication, computing, medical technology and industrial automation segments
- Dual-beam receptacle contacts
- Provides high electrical reliability and withstands high level of vibration
- Blind-mating feature
- Suit for those tasks where visual and tactile tools are compromised during mating process
- Modular design

### Applications

- Communications
  - > BBU
- Data
  - > Server/storage
- Industrial and instrumentation
  - > Factory automation

## AMPHENOL ICC COOL EDGE 0.8MM HIGH SPEED HYBRID CONNECTORS



[VIEW PRODUCT DETAILS](#)

[BUY NOW](#)

The 0.8mm pitch Double Density Cool Edge connectors and cable assemblies offer a compact design with 2 rows of contacts. This highly configurable single piece connector can accommodate both high speed and low speed signal and power. This hybrid connector reduces more than half of the PCB footprint when compared to 1mm PCIe Cool Edge. It supports PCIe Gen. 5 and is designed for multiple add-in-card thicknesses.

- Provide options for 1.6mm and 2.36mm AIC
- Hybrid configuration with differential, single-ended and power pin options
- High speeds of up to 32GT/s (or 56GT/s PAM4) capability
- Saves much more space than most of the cardedge connectors in market
- 76 to 428 contacts

### Features and benefits

- 0.8mm pitch
- 2A per pin for power application
- 0.5A per pin for signal application
- Support high density hybrid applications
- Signal pins options from 76 to 428
- Support maximum 70 lanes per connector
- Hybrid configurations
- Allows flexible power-signal combinations
- Accommodates 1.6mm and 2.36mm thick mating boards
- Supports most of the standard AIC applications
- Optimised contact design to meet 32Gb/s
- Meets next generation signal speed requirements

### Applications

- Communications
  - > Baseband
  - > Commercial systems
  - > Networking
  - > Radio units
  - > High-end computing system
  - > Server and storage systems
- Data
  - > Server and storage systems
  - > High-end computing system

## AMPHENOL ICC COOL EDGE 1MM PCIe CONNECTORS



[VIEW PRODUCT DETAILS](#) 

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Cool Edge PCIe® connectors bring high speed PCIe® support into a one-piece card edge package with 16GT/s Gen. 4 and 32GT/s Gen. 5 capabilities. Slim connector design saves space on the motherboard while facilitating other higher density applications. These connectors come with a simple housing design with an overall reduced footprint, providing additional benefits over standard PCIe® CEM solutions. The conductive plastic design of these connectors provides enhanced signal integrity. The contact pads extend outwards from housing making inspection easier.

- Provides standard and short solder tail version
- Supports speeds up to 32GT/s
- Saves more space than standard PCIe® solution
- Enhanced signal integrity using conductive plastic design
- Simple housing design allow vertical AOI inspection

### Features and benefits

- Signal pin pitch at 1mm, based on PCIe interface
- 1.1A/pin for power application
- 0.7A/pin for signal application
- Supports board-to-board applications
- Supports speeds from 16Gb/s, up to 25Gb/s and 32Gb/s
- Backward compatibility toward PCIe® Gen.3 and forward compatibility toward PCIe® Gen.5
- PCIe® slots of x8, x16 and x24
- Support most add-in card and next generation GPU applications

### Applications

- Communications
  - > Baseband
  - > Radio units
  - > Networking
- Data
  - > Server and storage systems
  - > High-end computing system
  - > Makes inspection easier compared to standard PCIe®

## AMPHENOL ICC DDR5 SO-DIMM HIGH SPEED HIGH DENSITY CONNECTORS



[VIEW PRODUCT DETAILS](#) 

DDR5 SO-DIMM connectors deliver high-speed and bandwidth. Being half the size of regular DIMMs, they lower power consumption and promote better thermal management. 262 positions SO-DIMM connector is available in 4mm height with standard option. Sketching design of DDR5 SO-DIMM 8mm height with standard option now.

- High density design of 0.5mm pitch saves board space
- High speed DDR5 digital validation
- Will provide different key positions that aid alignment
- SMT mechanical hold-downs
- Right angle orientation is available and sketching the design of vertical orientation for different customer preference
- Sketching the design of reverse options for both 4mm and 8mm height now

### Features

- 4mm, 8mm height offerings
- Accommodates different customer applications
- High density design of 0.5mm pitch
- Saves board space
- Allows more transition channel for signal
- LCP, halogen-free, resin housing material
- Withstands high temperature IR flow
- Different key positions
- Helps to align connector and prevent mismatching
- SMT mechanical hold-downs
- Ensures co-planarity adjustment during mounting

### Applications

- Communications
  - > Routers
  - > Switches
  - > Base stations
- Data
  - > Servers
  - > Workstations
- Consumers
  - > Desktop PCs
  - > Notebook PCs
- Industrial and instrumentation
  - > Embedded systems

## AMPHENOL ICC MICROSD EXPRESS CONNECTORS



[VIEW PRODUCT DETAILS](#) 

Amphenol is the first in the industry to offer card sockets for both microSD Express and micro SD cards (UHS-I). The 17 pin microSD Express connector is capable of achieving high speeds up to 985MB/s and meeting PCIe® 3.0 requirements. The connector enables microSD Express platform to reach its full potential; making microSD Express card possible to serve as a removable Solid State Drive (SSD). This platform is ideal for high resolution content and speed-hungry mobile computing and IOT devices.

- Data rate: 8GT/s (PCIe® Gen. 3 requirement)
- Supports card-detect function
- Backward compatibility and interoperability with legacy micro SD cards

### Features

- New 17 pin connector design
- Supports next generation performance
- Dedicated pin for card detect function
- SD host is in deep low-power mode until the card is inserted
- Backwards compatible with the legacy micro SD card (UHS-I)
- Provides higher adaptability and practicability
- Data transfer speed of up to 8GT/s
- Approximately 6x faster than existing micro SD card
- Robust mating mechanism that ensures reliable connection
- Specially targets demanding application that requires high speed and storage capacities

### Applications

- Consumers
  - > Mobile phone
  - > Tablet
  - > Virtual reality camera
  - > Augmented reality camera
  - > Unmanned Aerial Vehicle (UAV)
  - > IoT devices
  - > Mobile computing devices
  - > Surveillance cameras

## AMPHENOL ICC MINI COOL EDGE 0.60MM CARD EDGE CONNECTORS



[VIEW PRODUCT DETAILS](#) 

Mini Cool Edge is a 0.6mm high density, high speed card edge connector for this generation small form factor system. These fine pitch solutions offer multiple BTB applications like right angle, mezzanine and coplanar and support cable interconnect options. Mini Cool Edge 0.6mm meets SFF TA-1002, Gen. Z, EDSFF and OCP NIC 3.0 specifications.

- Common applications include solid state drive, network interface card, add-in card
- Vertical, right angle, straddle mount and orthogonal options are available
- High speed from 32GT/s to 56GT/s, and up to 112GT/s PAM4

### Features

- Signal pin pitch at 0.6mm with current rating of 1.1A, up to 12 pins for power applications
- Supports small power BTB applications
- Provides power for module card
- Signal pins options from 56, 84, 140, 168, 280
- Customisation of pin count upon request
- Supports different board-to-board, module applications like FPGA, SSD, NIC
- Small form factor
- Serves as a space-saving connector
- Discrete pin design
- Supports single-ended, high speed differential pairs up to 32G NRZ, 56G PAM4, 112G PAM4

### Applications

- Communications
  - > Baseband
  - > Commercial systems
  - > Networking
  - > Radio units
- Data
  - > High-end computing system
  - > Server and storage systems

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## AMPHENOL ICC MINITEK® 1.8MM WIRE-TO-BOARD CONNECTORS



[VIEW PRODUCT DETAILS](#) 

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Minitek® 1.8mm wire-to-board connector's compact design address the growing demand for miniaturising automotive application market. The connector is double row offering four coding with different colours.

The connector has nominal current carrying capacity of 3A and cable wire gauge from 22AWG to 26AWG. Minitek® 1.8mm wire-to-board is available in 10 to 40 positions double row with vertical and horizontal TH and SMT configurations.

- USCAR-2 V2 compatible
- Reflow tin plated reduce mating force
- Four different coding with different colours visual mismatching
- Position from 10 to 40
- Terminal Position Assurance (TPA)
- Connector Position Assurance (CPA)

### Features

- Reflow tin plating process for terminal
- Low mating and un-mating force
- Current rating 3A with each contact
- Meet higher power amps performance
- Terminal-Position-Assurance (TPA)
- Ensures proper terminal insertion position and retention
- Four different coding with different colours
- Visual and mechanical mismatching prevention system
- Connector Positioning Assurance (CPA)
- Ensures that connectors are properly mated and locked together

### Applications

- Industrial and instrumentation
  - > Robotics
- Automotive
  - > BMS (Battery Management System)
  - > OBC (On Board Charge)
  - > MCU (Micro Controller Unit)
  - > Gateway
  - > Lighting
  - > ADAS (Advanced Driving Assistance System)
  - > RADAR

## AMPHENOL ICC MINITEK® MULTIPITCH 1.5MM WIRE-TO-BOARD CONNECTOR SYSTEM



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

The Minitek® multipitch platform connector's compact design addresses the growing demand for miniaturising components. The connector system has single row and double row with active latching, and TPA and CPA features can be an optional.

The connector has current carrying capacity of 2A and cable external diameter from 24AWG to 28AWG.

1.5mm single row connector is available in 2 to 15 positions with horizontal configurations.

- Inner active-latch
- Connector Positioning Assurance (CPA)
- Terminal-Position-Assurance (TPA)

### Features

- Housing with positive locking
- Ensures secure mating retention
- Hold down features
- Increase the board grip force
- Terminal-Position-Assurance (TPA)
- Ensures proper terminal insertion position and retention
- Polarised mating geometry
- Prevents visual mismatching
- Connector Positioning Assurance (CPA)
- Assures that connectors are properly mated and locked together

### Applications

- Consumers
  - > Personal care devices (air dryer)
  - > Home care devices (cleaning robot)
  - > Home automation (alarm system)
- Industrial and instrumentation
  - > Robotics
  - > PLC
  - > Power tool
- Automotive
  - > Steering control button
  - > Infotainment
  - > Lighting

## AMPHENOL ICC MXM 3.0 SERIES HIGH DENSITY PCIE CONNECTORS



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

Amphenol's MXM connector is a high-density PCIe® solution that supports next-generation server system architectures. These are non-proprietary, industry standard sockets. This helps to upgrade the graphics processor in a device, without changing the whole system or relying on proprietary vendor upgrades. With 0.5mm pitch and 314 contacts, the MXM 3.0 connector supports 16 lanes PCI Express® signal performance with smaller board space. Typical applications include notebook computers, blade and standard rack-mount servers, mobile workstations and alternative form factor PCs including all-in-one home theater, and small form factor PCs.

- Accommodates up to 16 lanes on PCIe® 2.0
- Supports up to 8 DDR2, DDR3, GDDR3 or GDDR5
- Up to 4 dual-MODE display ports supporting DVI and HDMI
- Single 24-bit dual-link LVDS, dual-link DVI and HDMI
- Single VGA and TV-out

### Features

- Card edge connector with 314 contacts on a 0.5mm pitch
- Fully compliant with MXM 3.0 specification
- Compliant with PCIe® 3.0
- Serves multiple high-speed peripheral applications
- Small form factor 0.5mm pitch solution
- Saves board space
- Various connector height options
- Reduces overall height profile
- Supports both single and double-sided modules
- Enables higher data rate transmission

### Applications

- Notebook PCs
- Servers
- Workstations

## AMPHENOL ICC PCI EXPRESS GEN. 4 AND GEN. 5 CONNECTORS



[VIEW PRODUCT DETAILS](#) 

PCIe® Gen. 4 and Gen. 5 connectors outperform industry standard PCIe® 4.0 and 5.0 (proposed) requiring higher speed performance. The optimised series supports backwards mating and is footprint compatible with PCIe 3/2/1.

These 1mm pitch, vertical and right angle card edge connectors enable all generations of PCI Express® signaling in desktop PCs, workstations, and servers. The connector designs provide support for 2.5GT/s (Gen. 1), 5.0GT/s (Gen. 2), 8.0GT/s (Gen. 3) and recently upgrade to 16GT/s (Gen. 4), even further to Gen. 5 32GT/s per differential signal pair.

Amphenol's expansive range of vertical PCIe® Gen. 4 and Gen. 5 connectors will include options for Surface Mount (SMT), through hole solder, Press-Fit (PF) and straddle mount terminations.

- Backward mating and footprint compatible
- Higher speed performance without altering footprint
- Wide range of positions available
- Optional ridge feature according to customer preference

### Features

- A variety of termination types are available
- Able to meet different customer soldering requirements
- Aside from x1, x4, x8, x16 standard links as per PCI-SIG CEM specification, x24, x32 are also available
- Our connectors provide excellent performance and additional options for extreme bandwidth application
- Outperform Gen. 4/5 specification, but also backward compatible to Gen. 1/2/3 specification, with the exception of Gen. 5 straddle mount
- Capable to supp

### Applications

- Communications
- Data
- Consumers
- Industrial and instrumentation

## AMPHENOL ICC PCIE M.2 GEN. 3 AND GEN. 4 CARD EDGE CONNECTORS



[VIEW PRODUCT DETAILS](#) 

Amphenol's PCIe® M.2 Gen. 3 and Gen. 4 connectors provide 67 contacts on 0.5mm pitch. It occupies less board space, offers more connector height options and supports higher data rates compared to PCIe® mini card connector. It is designed for PCIe® 3.0, USB 3.0 and SATA 3.0 applications, making it suitable for tablets, laptops and low profile storage and server applications. PCIe® M.2 connectors also support higher data rate transmission with both single and double-sided modules.

- Various connector height and keying options
- Accepts angled insertion of add-in module cards
- Some PNs support both angled and straight insertion
- Provide both right angle and vertical orientation M.2 connectors
- Sketching Gen. 5 M.2 design which meets 32Gb/s rate

### Features

- Card edge connector with 67 contacts on a 0.5mm pitch
- Fully compliant with PCI-SIG PCIe® M.2 specification
- Compliant with PCIe® 3.0, USB 3.0 and SATA 3.0
- Serves multiple high speed peripheral applications
- 75 positions with 8 connector key options
- Design flexibility
- Available in various connector height
- Options to reduce overall height
- Supports both single and double-sided modules
- Enables higher data rates

### Applications

- Data
  - > Server
  - > Solid State Drive (SSD)
- Consumers
  - > Laptop
  - > Ultra-book
  - > Tablets
  - > Desktop

## AMPHENOL ICC SAS/PCIE® 4.0 (U.2&U.3) CONNECTORS



[VIEW PRODUCT DETAILS](#) 

SAS/PCIe® 4.0 (U.2&U.3) connectors come with 16GT/s (PCIe® lanes) or 24Gb/s (SAS lanes) speeds to meet the demands of next-generation servers. The 68-position, SAS/PCIe® receptacle and header enables implementation of high speed Serial Attached SCSI (SAS) Hard Disk Drive (HDD) interface as well as Peripheral Component Express (PCIe®)-based devices. The molded guide post allows device plug and receptacle to self-align during mating process. With halogen-free high temperature thermoplastic, these connectors are made to withstand diverse conditions. It also offers a durability of 500 mating cycles.

- Compatible with SFF8639 specification
- Capable of meeting 24Gb/s SSDs and HDDs or PCIe® based devices at 16GT/s
- Footprint backward compatible to 12G, 6G and 3G SAS connectors

### Features

- Receptacles are inter-mateable with unshielded dual port SFF8680 (SAS 3.0 or SAS 4.0) connectors
- Offers flexibility in component selection
- SAS/PCIe connectors enable SFF8630, SFF8680 and SFF8432 interfaces
- Implementation of high speed SSDs (Solid State Drives) and HDDs (Hard Disk Drives) allows compatibility between unshielded dual and multipoint interfaces
- Backward compatible with 12Gb/s, 6Gb/s SAS, SATA and 3Gb/s SFF8482 connectors
- Same interface can be used for cost-effective storage HDDs as well as higher performance server SSDs
- Supports up to 4 port 16Gb/s PCIe based devices

### Applications

- Communications
  - > Processor and storage blades
  - > Mezzanine cards
- Data
  - > HDD
  - > HDD carrier
  - > External storage system
  - > Interposer card
  - > Server
  - > Storage server
  - > Processor and storage blade

## AMPHENOL ICC SERIAL ATTACHED SCSI (SAS) 4.0 CONNECTORS



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

SAS 4.0 connectors for next-generation servers with 24Gb/s speeds. The 29-position receptacle and plug connectors feature hot-plugging and blind-mating, connector misalignment compensation, and a PCB retention mechanism for robust SMT attachment. The connectors are SATA compliant and meet a wide range of vertical and right angle configurations for usage across server and storage equipment, HDDs, HDD carriers and SSDs.

- Compatible with SFF8681 specification
- Foot print backward compatible to 12G, 6G and 3G SAS connectors
- Staggered contact lengths for hot plugging applications
- Vertical receptacle is available in SMT, PF and hybrid
- Header is available in right angle and vertical orientation
- Supports both SAS and SATA drives

### Features

- Supports both SAS and SATA drives
- Addresses the needs of both mission critical and bulk storage applications
- Staggered contact lengths
- Provides sequential contact mating for hot plugging
- Vertical backplane receptacles come with wide-base housing options
- Provides added stability
- Stamped clips act as connector retainers for robust PCB attachment
- Provide additional mechanical strength after soldering
- Molded guideposts help mating halves to self-align by providing angled lead-ins

### Applications

- Communications
- Data
- Industrial and instrumentation

## AMPHENOL ICC SLIM COOL EDGE 0.65MM HYBRID POWER AND SIGNAL CONNECTORS



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

Slim Cool Edge Hybrid Power and Signal connectors provide one-piece high speed and high power card-edge package. These connectors offer cost competitive and high density solutions. These versatile solutions based on a 0.65mm signal pitch design offer multiple BTB configurations like right angle, mezzanine and coplanar. Moreover, the connectors are designed as open pin field and are hot plug capable. These connectors feature modular tooling that allows multiple power-signal combinations for vertical configurations.

- Right angle and straddle mount options are available upon request
- High speed up to 32GT/s (or 56GT/s PAM4) capability
- Supports multiple impedance systems

### Features

- Power pin pitch at 1.3mm and current rating of 3A per pin
- Supports small power BTB applications
- Signal pin pitch at 0.65mm and current rating of 0.5A per pin
- Supports most mating board applications
- Power pins from 4 to 12 and signal pins range from 20 to 280
- Allows flexible power-signal combinations
- Offset signal pin with surface mount termination
- Provides better signal integrity performance
- Open pin field design
- Supports both single-ended and differential pairs with speeds up to 32Gb/s (or 56Gb/s PAM4)

### Applications

- Communications
  - > Baseband
  - > Radio units
  - > Networking
  - > Commercial systems
- Data
  - > Server and storage systems
  - > High-end computing system

# Connectors

## AMPHENOL ICC USB4 TYPE C CONNECTORS



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

DIN 41612 High Temperature (HT) connectors meets the fire safety standards required in industrial and transportation market. The 2.54mm pitch USB 4 connectors compatible with Thunderbolt 4 interface combines power charging, tunneling USB, PCIe® data transfer, and DP video and audio capability in a single Type C connector. With a power rating up to 100W, these connectors have a high speed data transmission rate of up to 40Gb/s. The USB 4 connectors are ideal for applications in storage, notebook (laptops), tablet, docking, peripherals (monitor/display, projector), automotive infotainment and home entertainment.

- Power delivery up to 100W high-speed transmission up to 40Gb/s
- High-speed transmission up to 40Gb/s reversible plug and cable orientation
- Support 4K UHD 60Hz display
- Reversible plug and cable orientation
- All-in-one simplicity

### Features

- High-speed transmission up to 40Gb/s high speed data communication
- Excellent copper alloy material for terminals design extended 5A current rating for USB power delivery and up to 100W
- Supports display port protocol drive multiple 4K UHD at 60Hz
- Support power delivery, data transfer, video output in one connector
- All-in-one simplicity
- Reversible plug and cable orientation for better user experience
- Tailored for emerging product designs
- Up to 10,000 mating cycles

### Applications

- Automotive
- Communications
- IoT

## AMPHENOL LTW HIGHLY FLEXIBLE CABLES



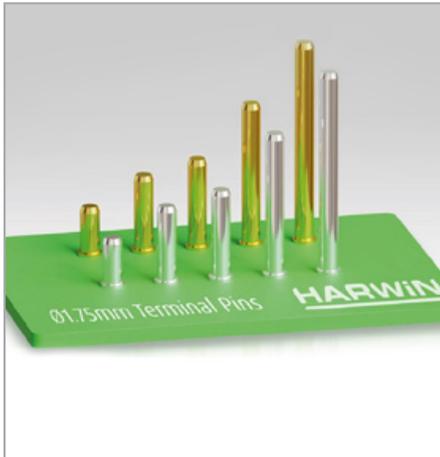
[VIEW PRODUCT DETAILS](#) 

Amphenol LTW provides highly flexible cables for constant moving applications. Ideal for modern automated manufacturing systems.

### Features

- Recommended connectors series: M8, M12, X-LOK, Ceres, USB, RJ45
- Bending standard: TÜV 2 PFG 2577 Class II
- Flexible test: 6 million cycles ( $S \leq 4\text{mm}^2$ )
- 90° bending test: 1 million cycles
- Cableveyor test: 5 million cycles

## HARWIN Ø1.75MM TERMINAL PINS



[VIEW PRODUCT DETAILS](#)

These terminal pins are ideal for strong and durable single point connections for ultra-low profile and offset height board-to-board connections. Robust Ø1.75mm pin thickness resists accidental damage. Five lengths of terminal pin for varying the distance between mating PCBs, allowing for wider tolerance gaps than many multi-pin connections. Also suitable as PCB location pegs or grounding connections for stacked board configurations. Available with finish choices in hard gold or tin over nickel.

Compatible with:

- S9101-46R: twin beam top entry SMT PCB socket with 2 contact points, tin finish
- S9111-45R: SYCAMORE contact, gold finish, top entry SMT PCB socket with 3 contact points
- S9121-45R: SYCAMORE contact, gold finish, bottom entry SMT PCB socket with 3 contact points

### Features

- Ø1.75mm mating pin diameter
  - > Compatible with existing Harwin sockets and other industry PCB connections
- Chamfered mating edge
  - > Minimise impact and wear on mating surfaces
- Rear drilled hole, can be used for swaging
  - > For added mechanical retention if required before soldering
- Designed for 1.6mm PCB thickness
  - > Suitable for common PCB types and wave soldering techniques

### Applications

- Fire and security
  - > Gas and smoke detectors, CCTV systems, handheld IR cameras
- Industrial
  - > Factory robotics, remote operating modules, PCB stacking and grounding
- Space
  - > Satellites and CubeSats, launch peripherals, remote sensors and detection equipment
- Defense and security
  - > UAVs, UUV and other ROV, handheld portable equipment, rugged vehicle electronics

## HARWIN S1961-46R AND S1971-46R SERIES MULTI-DIRECTIONAL SPRING CONTACTS



[VIEW PRODUCT DETAILS](#)

Always providing highly inventive engineering solutions, Harwin has now expanded its range of spring contacts with the addition of two further versions. These surface mount components are capable of supporting both horizontal and vertical connection orientations, but come in smaller size formats than were previously available. The S1961-46R has a 3.55mm height, while the S1971-46R has a height of 4.55mm.

Although there are a multitude of vertical-only spring contacts already on the market, components that can also support horizontal operation are less common. However, the demand for higher density electronic designs means that engineers need greater flexibility with regard to how boards are connected together and this is why support for multi-directional operation is so attractive.

The S1961-46R and S1971-46R both have current ratings of 14 amps. This enables them to be used in low level power delivery applications, as well as signal transfer and enclosure grounding tasks. They have a mating durability of more than 5,000 cycles. As connection is through touch rather than a wiping action, they have a greater operational life than horizontal tin-plated connectors.

These items complement Harwin's existing multi-directional spring contact products with larger form factors (S1941-46R, S1941-42R and S1951-46R). As with all of Harwin's spring contact products, these units are supplied via tape-and-reel. Their surface mount design means they are suitable for automated assembly lines using pick-and-place machines.

# Connectors

## MOLEX CP-3.3 WIRE-TO-BOARD CONNECTORS (212209, 212210, 212213, 50397 SERIES)



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

Glow wire compliant and potting capable CP-3.3 wire-to-board connectors feature full keying and colour pairing to prevent mis-mating and enhance user safety in consumer electronics, white goods, industrial and medical applications.

### Features

- Fully polarised and colour-coded plugs and receptacles
  - > Facilitate easy identification of mating parts, preventing mis-mating and speeding up the assembly process
- Potting capability (7.5mm height)
  - > Prevents ingress of dust and water
- Two Terminal Position Assurance (TPA) retainers
  - > Ensure that crimped terminals are fully inserted
- Inertia (less impact to PC board) inner lock on receptacle housing
  - > Facilitates low-insertion-force locking; tactile and audible 'click' ensures fully locked housings
- Kinked solder tails
  - > Offer added header to PCB retention during solder reflow
- Glow wire compatible
  - > Meets global safety and environmental requirements

### Applications

- Industrial automation
  - > Automation equipment
- Consumer
  - > White goods
  - > Gaming machines
  - > Drones
  - > Air conditioners
  - > Laser printers
  - > Vacuum cleaners
  - > Desktop PCs
  - > Power tools
- Automotive
  - > Infotainment
- Medical
  - > Patient monitoring

## MOLEX CP-4.5 WIRE-TO-WIRE CONNECTORS (206996, 206997, 206998, 207000 SERIES)



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

Glow-wire capable and halogen-free CP-4.5 wire-to-wire connectors combine superb locking with fool-proof keyed, colour-coded and polarised mating for reduced inventory and operational costs in consumer, industrial and power applications.

### Features

- Positive inertia lock
  - > Delivers an audible mating click, latch protection, and secure terminal and mating retention
- Raised housing block on the adjacent sides
  - > Prevents snagging of wires under the latch during harness manufacturing and storage
- Glow-wire capable
  - > Meets global safety standards
- Integral beam
  - > Supports both ends of the connector housing to prevent wire-snagging
- Polarisation keys on housing ribs
  - > Prevent mis-mating, which can cause electrical shorting
- Wide spectrum of housing colours
  - > Allows quick identification of mating combinations for assembly and repair purposes

### Applications

- Consumer
  - > Washing machines
  - > Water heaters
  - > Air conditioners
- Industrial/Industrial automation
  - > HVAC system
  - > Copiers
  - > Vending machines
  - > Power (power supplies, UPS)
  - > Wire-to-device

# Connectors

## MOLEX EASY-ON FFC/FPC ONE-TOUCH CONNECTORS (200485 SERIES)



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

Easy-On FFC/FPC one-touch connectors feature singlestep mating with an auto lock-nail mechanism and high retention force a for quick and reliable connection and easy operation, making these connectors ideal for many industries.

### Features

- One-touch insertion operation
  - > A wide FFC/FPC mouth helps in easy insertion and auto-lock assembly line benefits the customer manufacturing line
- Visible release button
  - > Eases FFC/FPC cable release operation
- Ground terminal (optional)
  - > Provides superior signal integrity
- Operates at a temperature of up to +125°C
  - > Meets a wide range of application needs
- Lock-nail system
  - > Ensures FFC/FPC cable connection by high retention force
- Selective gold plating on signal terminal
  - > Prevents solder wicking for the SMT solder tail

### Applications

- Connected home/home appliance
  - > Smart appliances
  - > Smart connected appliances
  - > Vending machines
- Automotive
  - > Connected mobility
  - > Comfort and infotainment
- Data/computing
  - > Servers/networking/storage
- Consumer
  - > Home entertainment
  - > Flat LCD/LED display panels
  - > Home security
- Industrial
  - > Connectivity
  - > Signal
- Industrial automation
  - > Automotive assembly line

## MOLEX FSB3 SERIES SLIMSTACK 0.40MM BOARD-TO-BOARD CONNECTORS (204927, 204928 SERIES)



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

SlimStack board-to-board Connectors, 0.4mm pitch floating, FSB series feature 3mm and 5mm stacking height with a large floating range for space-saving and design flexibility, making them ideal for a wide range of applications in the automotive, industrial, medical and consumer industries.

### Features

- $\pm 0.3$ mm floating range in X-, Y- and Z- axis directions
- Facilitates assembly in the event of misalignment or blind joining
- Smallest size in the B-to-B floating connectors market
- Provides space saving
- Soft floating force
- Makes assembly and operations easy
- High-temperature support up to +125°C
- Improved design applicability
- Low-halogen material
- Meets industry environmental requirements
- High-speed transmission
- Supports a high-speed transmission rate of up to 6Gbps
- $\pm 0.5$ mm floating range in X-, Y- and Z- axis directions
- Facilitates assembly in the event of misalignment or blind joining

### Applications

- Automotive
  - > Car cameras
  - > Car radar
  - > Car LiDAR
  - > Car infotainment
  - > Electric vehicle inverters
  - > Electric vehicle ADAS
- Industrial
  - > Automation machines
  - > Transformers
  - > Test equipment
- Consumer
  - > UAVs (drones)
  - > Gaming consoles
  - > Mini digital cameras
  - > Security cameras

# Connectors

## MOLEX MICRO-ONE WIRE-TO-BOARD CONNECTOR WITH INTEGRATED ISL (217063, 217064 SERIES)



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

Compact Micro-One wire-to-board connector with integrated ISL and potting capability, providing secure electrical contact, superior mating retention and protection against harsh environment conditions.

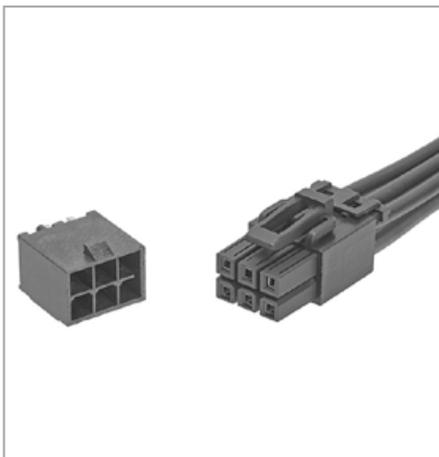
### Features

- 2mm pitch low-profile design
  - > Reduces weight and saves space
- UL certified connectors
  - > Ensures reliability
- Independent Secondary Lock (ISL)
  - > Detects incomplete terminal insertion
- 2- to 8- circuit vertical and right-angle header assembly
  - > Offers design flexibility
- Potting liquid (up to 7mm height)
  - > Prevents ingress of dust and moisture

### Applications

- Consumer
  - > Refrigerators
  - > Air conditioners
  - > Hot water gas heaters
- Industrial
  - > Power tools
  - > Test equipment
  - > Robots
  - > Factory automation
  - > Drones
  - > Vending machines

## MOLEX MINI-FIT MAX CONNECTORS (212514, 212515, 212520 SERIES)



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

Transcending mid-power connector products, the Mini-Fit Max wire-to-board connector provides 20.5A of current in a compact package and features a robust tangleless terminal design with a TPA capable receptacle.

### Features

- 94/V-O Glow-wire combination resin
- 4 Independent points of contact
- Keying and polarisation
- TPA stop
- End-to-end stackable
- Slim profile design
- Optional TPA with TPA stop
- Tangleless terminal

### Applications

- Telecommunications/networking
  - > Switches
  - > Servers
  - > Power supplies and distribution
  - > Network towers
- Industrial
  - > Machinery
  - > Commercial equipment
  - > Commercial lighting
  - > Industrial HVAC systems
- Home appliance
  - > Heaters and air conditioners
  - > Washers and dryers
- Commercial vehicle
  - > Power converters unsealed electronic control modules
  - > Transportation trucks

# Connectors

## MOLEX MINI-FIT SIGMA PLUGS (172762, 172767, 200471, 200488 SERIES)



[VIEW PRODUCT DETAILS](#)

[BUY NOW](#)

The Mini-Fit connector family delivers up to 13A, while blind-mating and terminal position assurance options provide a versatile connector system for a wide range of applications.

### Features

- Fully isolated terminals
- Polarised mating geometry
- Receptacles and plugs accept both standard Mini-Fit and Mini-Fit Plug crimp terminals
- Positive locking housings
- Crimp terminals are produced from a proprietary, high-current alloy
- Terminals feature a patented, elongated dimple design
- Select series offer up to 1,500 mating cycles with gold terminals; standard series support 100 mating cycles with gold-plated terminals; 75 mating cycles with tin-plated terminals
- Self-aligning interface
- Backshell option available
- Blind-mating interface
- Terminal Position Assurance (TPA) with secondary locking feature
- Panel mount and vertical header options
- Visual colour pairing (colours can be intermated)
- Robust latch design
- V-0 glow wire combination resin

### Applications

- Automotive
- Commercial vehicle
- Consumer
- Data/communications
- Home appliance
- Industrial
- Industrial automation
- Medical
- Telecommunications/networking

## MOLEX MINI50 SEALED WIRE-TO-DEVICE RECEPTACLES (34967, 34894, 34905 SERIES)



[VIEW PRODUCT DETAILS](#)

[BUY NOW](#)

Delivering significant space savings over traditional USCAR 0.64mm connectors, Mini50 sealed wire-to-device receptacles utilise smaller pins, terminals and wire gauges while providing protection from water and dust ingress.

### Features

#### Single-row receptacle

- Sealed receptacle
- Optional CPA
- Polarisation options
- Independent Secondary Lock (ISL) terminal-retention feature
- Reduced package sizes
- Rounded shape

#### Dual-row connectors

- Cavity plug available
- Independent Secondary Lock (ISL) terminal-retention feature
- Optional CPA
- Reduced package sizes
- Polarisation options

### Applications

- Automotive and transportation
- Power steering
- Cameras
- Sensors (parking, radar, etc).
- Braking
- Exterior lighting
- Mirrors

# Connectors

## MOLEX MX150 BACKSHELLS (34950, 34951 SERIES)



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

The field-proven MX150 sealed connector system with a USCAR interface offers a compact package, a superior operating temperature and a current rating up to 22A for power and signal automotive and commercial vehicle applications.

### Features

#### Sealed single- and dual-row connector system

- Mat seal technology for MX150 (1.5mm) terminals
- Preassembled Terminal Position Assurance (TPA) housing
- Temperature Class 4 (-40°C to +150°C) and 22A current rating

#### Hybrid connector

- Mat seal technology for MX150 (1.5mm) Terminals
- Flashover options (i.e., custom void patterns) available
- 11mm clip slot standard on blade connector and optional on receptacle

#### Terminals

- Tin, silver and gold options available for blade and receptacle matte seal and cable seal terminals
- Tin rated up to temp Class 3 (-40 to +125°C)
- Silver rated up to temp Class 4 (-40 to +150°C)
- Validated: USCAR-21, USCAR-2 and GMW3191 specs

### Applications

- Automotive and commercial vehicle
  - > Transmissions
  - > Head/tail lamps
  - > Body harnesses
  - > Wipers, washers, defoggers
  - > Speedometers
  - > A/C modules
  - > Turn signals
  - > Airbag harnesses
  - > Speakers
  - > Door connectors
  - > Brake modules
  - > Horns

## MOLEX OFF-THE-SHELF EDGELOCK DISCRETE CABLE ASSEMBLIES (216330, 216331 SERIES)



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

Off-the-shelf EdgeLock discrete cable assemblies offer space savings, positive locking for secure mating and a variety of cable lengths.

### Features

- Polarisation rib on connector housing
  - > Prevents mis-mating to PCB
- Locking feature on the reverse side of crimp terminal
  - > Prevents accidental terminal withdrawal once inserted into the housing cavity
- Dual cantilever crimp terminal design with embossed contact points
  - > Offer greater normal force for long-term electrical reliability

### Applications

- Consumer/home appliance
  - > Fitness
  - > Home appliances
  - > Home entertainment
  - > HVAC
- Industrial
  - > Power (power supplies, UPS)
  - > Wire-to-device
  - > Solid state lighting
  - > Indoor and outdoor lighting

# Connectors

## MOLEX OFF-THE-SHELF STANDARD .093 DISCRETE CABLE ASSEMBLIES (216290, 216291, 216292, 216293 SERIES)



[VIEW PRODUCT DETAILS](#)



[BUY NOW](#)



The standard .093 discrete cable assemblies deliver an off-the-shelf solution with a variety of cable lengths and up to a 12A current rating.

### Features

- Positive locking
  - > Ensures a reliable connection
- Panel-mount options
  - > Ensure flexible mounting on panels with standard and prebent ears
- Polarised header versions available in 5.03mm pitch size
  - > Help PCB designers in powering systems by using both male and female header pin combinations
- Keying and polarising features
  - > Allow operators to avoid mis-mating during the assembly process
- High-current terminals and double crimp options
  - > Help customer applications reach current up to 12A. Improve connector power performance by eliminating crimping errors

### Applications

- Consumer
  - > Microwave ovens
  - > Refrigerators
- Data/communications
  - > Analytical chemistry: GC, CE, capillary LC,
  - > Flow cytometry
  - > Hard disk drives
- Networking
  - > Rack-mount servers

## MOLEX OFF-THE-SHELF SUPER SABRE CABLE ASSEMBLIES (216010, 216011 SERIES)



[VIEW PRODUCT DETAILS](#)



[BUY NOW](#)



Off-the-shelf Super Sabre cable assemblies deliver a 34A current rating and offer a variety of cable lengths and power connectors with proven technology for longterm performance.

### Features

- Current rating of 34A per blade and 600V
- Operating temperature up to +105°C, USCAR-2, level 3
- Silver-plated, high-conductivity alloy terminals
- Flat-blade terminal design with four independent points of electrical contact
  - > Offers redundant, secondary current paths for long-term performance and reliability
- Positive latch and Terminal Position Assurance (TPA) features on receptacle
- Fully isolated terminals on both mating sides
- Wire-to-wire and wire-to-board configurations
- UL1977 and UL60950 "finger test" certified blade

### Applications

- Automotive
- Consumer
- Medical

## MOLEX SLIMSTACK BOARD-TO-BOARD BATTERY CONNECTORS (211175, 211176 SERIES)



[VIEW PRODUCT DETAILS](#)

[BUY NOW](#)

Off-the-shelf Super Sabre cable assemblies deliver a 34A current rating and offer a variety of cable lengths and power connectors with proven technology for longterm performance.

### Features

- Current rating of 34A per blade and 600V
- Operating temperature up to +105°C, USCAR-2, level 3
- Silver-plated, high-conductivity alloy terminals
- Flat-blade terminal design with four independent points of electrical contact
- Positive latch and Terminal Position Assurance (TPA) features on receptacle
- Fully isolated terminals on both mating sides
- Wire-to-wire and wire-to-board configurations
- UL1977 and UL60950 "finger test" certified blade

### Applications

- Automotive
- Consumer
- Medical

## TE CONNECTIVITY 16G 0.5MM FREE HEIGHT STACKING COM CONNECTORS



[VIEW PRODUCT DETAILS](#)

[BUY NOW](#)

TE Connectivity's (TE) generation of 0.5mm Free Height (FH) stacking connectors are compliant with the COM Express Type 7 specification and offer data transmission up to 16 GT/s. They serve as the connection between next-gen CPUs and carrier boards and are an economic solution with high speed and excellent SI performance to address the need for upgrading COM Express applications.

### Features

- Faster data speed—up to double previous generations with compatibility to PCIe Gen. 4 applications
- New contact design enables better signal integrity when compared to their previous generation products and to most in the market
- ~30% improvement in mating/unmating force enables easier operation
- Same footprint as COM Express standard interconnect means there is no need to change PCB footprints when upgrading applications
- Multiple configurations enable system design flexibility

### Applications

- COM Express modules
- Other applications that need vertical-to-vertical parallel board-to-board connections, e.g.:
  - > Embedding modules
  - > Customised: carrier, PC, control boards

## TE CONNECTIVITY 38999 SERIES IV METAL PROTECTIVE CONNECTOR COVERS



[VIEW PRODUCT DETAILS](#) 

TE Connectivity (TE) 38999 series IV metal protective covers are a key accessory to their standard 38999 series IV connectors, as these covers are used to protect the connectors (as well as the harnesses and systems) in the field when they are not in the mated condition.

Aerospace and defense applications that use MIL-DTL-38999 series IV connectors normally do not have the connectors in the mated condition 100% of the time. These metal covers protect their systems by being attached to the connectors so when the connectors are not mated, the field technicians can attach the metal covers to the connectors to keep them environmentally resistant.

### Features

- Qualified to MIL-DTL-38999 series IV, /51 and /52
- Available in 5 material/plating configurations
- Available in all 8 shell sizes
- Helps protect connector against dust, foreign objects and moisture intrusion, in the unmated condition

### Applications

- Military and commercial avionics systems
- Ground vehicles
- Radar systems
- Military launch platforms

## TE CONNECTIVITY AMPSEAL 16 HIGH TEMPERATURE CONNECTORS



[VIEW PRODUCT DETAILS](#) 

As an extension of the well-proven and widely known AMPSEAL 16 series, TE Connectivity (TE) has introduced AMPSEAL 16 high temperature connectors. These connectors offer greater temperature range and increased design options.

Compared to +125°C for the standard AMPSEAL 16 connectors, AMPSEAL 16 high temperature connectors allow for a 20 percent increased temperature range of up to +150°C. They also have a higher flammability rating of UL94 V-0 and two sealing options for SAE and ISO wires. Differentiated with a grey coloured housing, these high temperature variants can be easily identified and the 4 discrete colour polarisation keys help prevent miss-mating. In combination with the fully assembled one-piece-design, AMPSEAL 16 high temperature connectors are a cost-effective, easy to handle and easy to assemble product line.

AMPSEAL 16 connectors, targeted for truck and bus, off-road, heavy-duty industrial, recreational and agricultural industries, are the perfect solution for on-engine applications, after treatment systems and other high temperature applications increasing the design options throughout the vehicle or machine.

### Features

- Increased temperature range: up to +150° for extended on-engine, after treatment (Diesel Oxidation Catalyst (DOC), Diesel Particulate Filter (DPF), Selective Catalytic Reduction (SCR) and powertrain applications
- Higher flammability rating of UL94 V-0
- Different housing colours improves ease of assembly
- 4 colour polarisation keys help to prevent mismatching

### Applications

- On-engine control
- Aftertreatment
- Power Take-Off (PTO)
- Cooling system
- Engine compartment
- Engine sensors
- Motors and gearboxes

## TE CONNECTIVITY AMPSEAL 16 MINI LEVER CONNECTORS FOR SEALED APPLICATIONS



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

For bulkhead and pass-through applications, the AMPSEAL 16 mini lever connectors provide vital environmental protection for industries operating in harsh environments. The ergonomic lever lock system ensures ease of assembly, while the integrated Terminal Position Assurance (TPA) and Connector Position Assurance (CPA) protect against accidental unlocking and ensure precise contact position. Essential to correct panel mating are the tool-free, "drop and slide" mounting clips, available in 3 sizes. For wire bundling and corrugated tubing, 90° and 180° wire dress covers can also be purchased alongside the AMPSEAL 16 mini lever connectors.

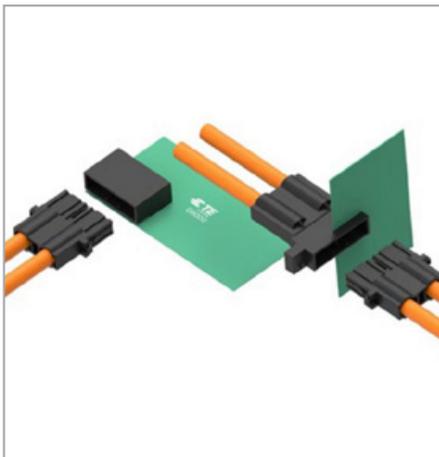
### Features

- Improve terminal retention and ensure proper position with standard Terminal Position Assurance (TPA), and protect against accidental unlocking with Connector Position Assurance (CPA)
- Help reduce application costs and assembly time with tool-less mounting design and "drop and slide" mounting clips
- Utilise proven DEUTSCH stamped and formed size 12 and 20 pin and socket terminals and AMPSEAL 16 Heavy Duty Stamped and Formed (HDSF) size 16 pin and socket terminals. Mil standard C-39029 approved
- Protect against water and dust with IP6K7/IP6K9K protection level
- Enable design flexibility with wire dress cover options of 90° and 180°: for wire bundling and corrugated tubing needs

### Applications

- Bus
- Speciality vehicles
- Industrial
- Lift truck
- Recreational
- Marine power
- Sports
- Agriculture
- Heavy duty truck
- Construction

## TE CONNECTIVITY DYNAMIC D8000 SERIES CONNECTORS



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

The Dynamic D8000 series is a high-current series of pluggable connectors in TE's Dynamic series. They inherit the normal Dynamic series features like the audible lock design and crimping contacts. The Dynamic product portfolio have both Wire-to-Wire (W-t-W) and Wire-to-Board (W-t-B) that provides connector solutions ranging from signal level circuitry through power circuit connectivity in a ruggedised, industrialised package. Vibration and shock proven, the intelligent audible locking system and unique crimping contact design drive efficiency and long service life through minimising downtime in the application.

Dynamic D8000 connectors carry currents as high as 100A per pin for W-t-W, and 90A for W-t-B making them suitable for power supply systems for industries like Battery Test Equipment (BTE), Battery Management System (BMS), factory automation, robotics, etc. They have a rated voltage of 1000V AC-DC, and withstand voltages of up to 3000VAC. Connectors require only two positions, rather than multiple positions when using connectors with small current-carrying capability, which for wire-to-board versions saves important space on the PCB. Wire-to-Wire (W-t-W) and Wire-to-Board (W-t-B) options are both available.

### Features

- High current capacity: up to 100A (W-t-W), 90A (W-t-B)
- Two-piece structure with crimping contacts which saves assembly time
- Audible lock design to ensure safe locking
- Both W-t-W and W-t-B available with two-position product
- Contact retention force in the housing of over 98N
- Maximum mating and unmating force 58.8N per pinKEY

### Applications

- BTE (Battery Test Equipment)
- BMS (Battery Management System)
- Factory automation
- Robotics

## TE CONNECTIVITY HDC SERIES WITH DYNAMIC INSERTS



TE's modular HDC series has been expanded to include a range of connectors with dynamic inserts. Designed specifically for harsh environments for industrial applications, the HDC Dynamic series makes it possible to reduce cable assembly costs by using semi-automatic or fully-automatic crimping of dynamic contacts.

Their compact designs offers users more design flexibility with high density up to 48 contacts and handling over-voltage requirement to 300V in a single module. Building on TE's proven dynamic contacts technology, the HDC Dynamic connectors deliver performance comparable with traditional HDC connectors.

### Features

- Extended portfolio that offers integration with existing HDC products
- Increased flexibility and reduced size for space-saving

### Applications

- Industrial robotics
- Industrial machinery
- Semiconductor
- Medical equipment
- WindKEY

[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

## TE CONNECTIVITY NTSEAL 20-POSITION CONNECTOR



Providing flexible and robust wire-to-wire connectivity in a compact format, TE Connectivity (TE)'s innovative 20-position, high-density hybrid sealed connector – NTSEAL 20 position connector utilises the proven DEUTSCH common contact system for serviceable applications in harsh environments. NTSEAL 20 position connector can be used in environments exposed to extreme temperatures and engine-level vibrations. The integrated Terminal Position Assurance (TPA) and Connector Position Assurance (CPA), tool-free mount design eliminates the need for additional parts or tools, providing quick, easy installation, and repair. Back shells and mounting clips are available to provide options needed to design robust solutions.

### Features

- Withstand extreme temperatures and engine-level vibrations
- Ensure correct positioning with integrated Terminal Position Assurance (TPA)
- Prevent accidental unlocking and ensure correct assembly with integrated Connector Position Assurance (CPA)
- Offer easy installation and repair with DEUTSCH clean body contacts (tang-less contacts)
- Avoid mis-mating of connectors with four colour-coding options and colours

### Applications

- Truck
- Bus
- Construction
- Agriculture
- Specialty vehicles
- Lift truck
- Recreational
- Marine
- Power sports

[VIEW PRODUCT DETAILS](#) 

## BOURNS PAC18R SERIES SEALED ABSOLUTE ROTARY ENCODER



[VIEW PRODUCT DETAILS](#) 

The model PAC18R is designed for use in professional audio and lighting applications, low/medium risk medical and diagnostic equipment, industrial automation controls and other select applications where a sealed menu select absolute encoder is required. This model features a shaft sealing for an enhanced IP (Ingress Protection) level and a superior rotational feel.

### Features

- Low profile absolute encoder
- 30,000 rotational cycle rating
- -35°C to +70°C operating temperature range
- High-Class rotational feel
- IP 64 shaft sealing
- Insulated plastic shaft and bushing
- Optional haptic detent feedback
- RoHS compliant

### Applications

- Professional audio equipment
- Professional lighting consoles
- Consumer white goods
- Low/medium risk medical and diagnostic equipment
- Test and measurement equipment
- Communications equipment
- Laboratory equipment
- Industrial automation controls

## BOURNS PDB08 SERIES MICRO ROTARY POTENTIOMETER



[VIEW PRODUCT DETAILS](#) 

The model PDB08 is designed for use in professional audio and lighting applications, low/medium risk medical and laboratory equipment, industrial automation controls and other applications where a miniaturised value adjustment is required. This model features a miniaturised outline and an insulated shaft.

### Features

- Micro low profile rotary potentiometer
- 10,000 rotational cycle rating
- -10°C to +60°C operating temperature range
- Insulated plastic shaft
- Optional centre detent
- RoHS compliant

### Applications

- Professional audio equipment
- Professional lighting consoles
- Consumer white goods
- Low/medium risk medical and diagnostic equipment
- Test and measurement equipment
- Communications equipment
- Laboratory equipment
- Industrial automation controls

## BOURNS PRS11R SERIES 11MM ROTARY METAL SHAFT POTENTIOMETER



[VIEW PRODUCT DETAILS](#) 

The model PRS11R is designed for use in professional audio and lighting applications, low/medium risk medical and laboratory equipment, industrial automation controls and other applications where a reliable potentiometer is required. This model features a very small form factor and offers an optional momentary switch.

### Features

- THT mounting type
- 15,000 rotational cycle rating
- -20°C to +70°C operating temperature range
- Flatted shaft option
- Horizontal or vertical orientation option
- Optional push momentary switch
- RoHS compliant

### Applications

- Professional audio equipment
- Professional lighting consoles
- Consumer white goods
- Low/medium risk medical and diagnostic equipment
- Test and measurement equipment
- Communications equipment
- Laboratory equipment
- Industrial automation controls

## BOURNS PRS12R SERIES 12MM ROTARY METAL SHAFT DUAL-POTENTIOMETER



[VIEW PRODUCT DETAILS](#) 

The model PRS12R is designed for use in professional audio and lighting applications, low/medium risk medical and laboratory equipment, industrial automation controls and other applications where a reliable potentiometer is required. This model features a very small form factor and offers a dual-potentiometric output.

### Features

- THT mounting type
- 10,000 rotational cycle rating
- -10°C to +70°C operating temperature range
- Flatted, knurled and slotted shaft option
- Horizontal or vertical orientation option
- Optional centre detent
- RoHS compliant

### Applications

- Professional audio equipment
- Professional lighting consoles
- Consumer white goods
- Low/medium risk medical and diagnostic equipment
- Test and measurement equipment
- Communications equipment
- Laboratory equipment
- Industrial automation controls

## C&K ATPS19 SHORT-BODY SEALED PUSHBUTTON SWITCH



[VIEW PRODUCT DETAILS](#) 

ATPS19 series is compact switch for panel mounted pushbutton with or without illumination, the product has reduced length of 15.85mm behind panel on comparison to the standard type of 25.5mm which take lesser space and easy for customer's mounting with wire termination in the tight area. Its ability to withstand potential malicious damage makes it ideal for some of the key applications as listed below.

### Features

- Shorter bushing version allow easy to access and ease of installation within the constraint space behind the panel
- Positive tactile feedback meets the haptic and sound, with clear "click" sound
- Stainless steel bushing provided high strength to prevent from damage and vandalism, reducing the need for costly in field repairs
- Choices of colour on LED illumination and various cap colours/styles. It gives various aesthetics look which appeal to different end users

### Applications

- Safety and security
  - > Access control/door buttons
  - > Intercoms and call station
  - > Emergency/panic buttons
  - > Handicap/assistance buttons
- Service station and interactive control panel
  - > Pedestrian crossing signal activation
  - > Parking lot ticket and paying stations
  - > Locomotive compartment
- Medical
  - > Portable "home care" devices
  - > Ventilate equipment
  - > Patient monitoring

## C&K D6 SERIES INTEGRATED LED KEYSWITCHES



[VIEW PRODUCT DETAILS](#) 

C&K expands the product coverage in the LED keyswitches offering. Momentary version, THT for easy integration into customer designs. Various LED colors available.

### Features

- Smooth tactile feedback
- Momentary
- THT version
- Bi colour LED illumination with choice colour

### Applications

- Medical devices: control panel
- Audio control panel: light indicators
- Laboratory test equipment: control panel

## C&K KSC TE SERIES 6MM X 6MM TOP ACTUATED TACT SWITCHES



[VIEW PRODUCT DETAILS](#) 

KSC TE is a KSC2 configuration with J leads, a soft actuator and a renewed combination of dome and support, upgrading the lifetime up to 10 million cycles.

Two versions KSC2 TE 31J LFS and KSC2 TE 41J LFS featuring 2.8N and 4N actuation forces come in addition to the KSC2 TE 01J LFS featuring lower force at 1.6N.

### Features

- Life cycles from 5M up to 10M cycles
- 6.2 x 6.3 form factor
- 3.5mm height
- Soft actuator
- 1.6N, 2.8N and 4N
- IP67

### Applications

- Elevator buttons
- Game controllers
- Barcode scanners
- Computer mouse/peripherals

## C&K NANOT SERIES COMPACT NANO SIZE TACT SWITCHES



[VIEW PRODUCT DETAILS](#) 

NanoT series tactile switches, the smallest tact switches ever, available in top actuated and side actuated versions with laser welded film. These switches are IP67 sealed and offer up to 300,000 cycles. The latest is available in full SMT or PIP for a stronger shear resistance.

### Features

- Ultra-compact size
- 1.65mm x 2.1mm x 0.5mm total height
- SMT or PIP versions
- IP67
- Integrated actuator
- High life cycles

### Applications

- Hearing aids
- Headsets
- Sports watches
- IoT portable devices

## C&K RK SERIES TACTILE MICROMINIATURE SMT SWITCHES



[VIEW PRODUCT DETAILS](#) 

RK series is low profile microminiature SMT top actuated tact switch with different choices of actuation force and long life cycle. The switch is ideal for applications that need a high density of components in limited PCB space, such as automotive keyfob, navigation and health and medical devices. The compact top-actuated RK series comes in various product sizes (RKA2: 4.5mm x 4.5mm x 0.55mm; RKB2: 4.2mm x 3.2mm x 2.5mm; RKC: 3.5mm x 2.6mm x 1.4mm). The RK series is available in 6 actuation forces (160gf, 180gf, 250gf, 400gf, 450gf and 540gf), allowing customers easily integrate into different designs.

### Features

- Low profile and microminiature package
- SMT termination
- Hard actuator
- 160gf, 180gf, 250gf, 400gf, 450gf and 540gf
- Life cycles up to 500K

### Applications

- Keyfob
- Navigation
- Health and medical devices

## OMRON PSON HIGHER CURRENT TYPE MOSFET RELAYS (G3VM-31WR, G3VM-61WR AND G3VM-101WR SERIES)



[VIEW PRODUCT DETAILS](#) 

OMRON G3VM- PSON is an ultra-compact MOSFET relay with a high current capacity for industrial and test applications. This MOSFET relay is available in three versions with load voltages of 30V (G3VM-31WR), 60V (G3VM-61WR), and 100V (G3VM-101WR), offering a continuous load current of 4.5A, 3A, and 2A respectively.

Available in the industry-standard PSON package all the MOSFET relay has a low on-resistance of 50mOhm to 200mOhm depending on the version. The relay has a high dielectric strength of 500VAC between the input and the output and has a leakage current of 1000nA when open. Despite the small size the terminal shape of the device has been designed to create a good soldering joint and to support easy solder inspection.

With an ambient operating temperature of -40°C to +110°C, the G3VM- PSON delivers a high continuous load current, low leakage in applications such as data loggers, communication devices, and test equipment. The device is also suitable for building automation systems and air conditioning applications.

### Features

- Load voltage: 20V to 600V
- Continuous load current: 40mA to 4A
- Dielectric strength: 300VAC to 5,000VAC
- General purpose, ultra-sensitive, ultra small
- Current limiting, high current and low ON-resistance, high voltage and high dielectric strength

## OMRON G5RL-K1A-EL-HA SERIES HIGH INRUSH CURRENT RELAY



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

Omron G5RL-K1A-EL-HA series is a low profile power relay specialised for high inrush performance.

- Expanded lineup of inrush current, latching, and low noise type
- Improved inrush performance for the lighting industry

### Features

- Creepage distance 8mm between coil and contacts
- 10kV Impulse withstand voltage
- Ambient operating temperature +85°C
- Suitable for TV-8 rating. (SPST-NO (1a))
- In-rush resistant and supports illumination load
- Compatible with capacitor load (IEC60669-1)
- Compatible with the international safety standard for electrical
- Electronic household appliances (IEC60335-1)
- G5RL-K1A-EL-HA type

### Applications

- Housing equipment
- Building automation
- UPS, FA equipment
- Electric power meter
- Illumination control
- Smart home

## PANASONIC AQV209G(A)X HIGH CAPACITY PHOTOMOS RELAYS



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

Panasonic has launched a series of HF 1 Form A high capacity photoMOS relays. AQV209G(A)X relays feature a load voltage of 1,200V (peak AC), ON-resistance of 10ohms and a 0.75A continuous load current in a DIP 6pin/1 Form A package.

### Features

- Load voltage: 1,200V (peak AC)
- On resistance: 1Ω (typ.)
- Continuous load current: 0.75A
- (A connection: peak AC, DC)
- Package/output configuration: DIP 6pin/1 Form A

### Applications

- Measuring equipment
- Testing equipment
- Industrial equipment

## SCHURTER TA36 SERIES THERMAL CIRCUIT BREAKERS



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

Improving a good product, this was the principle behind the development of the SCHURTER TA36 thermal circuit breaker. Based on the TA35, which has been successfully proven for many years, a refreshing product with a contemporary look was developed.

No longer only functionality and quality matter. Today, a good product must also withstand the critical gaze of a clientele who is accustomed to design.

### Features

- Unique UL rating of 277VAC
- Finely graded rated currents
- High configurability (rocker colours, lettering)
- Appealing design

### Applications

- Power tools
- Medical and laboratory equipment
- Industrial appliances
- Equipment for construction
- Cleaning equipment
- Commercial and household kitchen appliances
- Industrial power
- Industrial lighting arrays

## TE CONNECTIVITY CII FCC-325 SERIES RELAYS



[VIEW PRODUCT DETAILS](#) 

The FCC-325 relay from TE Connectivity (TE) expands on the existing high-power switching capabilities of their current MS27418 relay by providing the added benefits of auxiliary contacts. The 2A SPDT auxiliary contacts can be used to perform additional functions related to the control of the relay such as providing circuit trip feedback status, turning ON an indicator light, or other similar control functions. The FCC-325 relay is an excellent choice for harsh inductive, motor and lamp load applications needing additional connectivity.

### Features

- Rugged
  - > Hermetically sealed
  - > Provides corrosion-resistance
  - > All welded construction
  - > No solder sealing
  - > Space and weight saving
  - > 1.5 inch cube enclosure/0.452lbs
- Capable
  - > Excellent for switching harsh inductive, motor and lamp loads
  - > -70°C to +125°C temperature range

### Applications

- Launch systems
- Power distribution
- Fuel pumps
- Guidance and navigation systems
- Weapons systems
- Ground support equipment
- Naval/marine equipment

## TE CONNECTIVITY POTTER & BRUMFIELD T92 SERIES 50A POWER RELAY



TE Connectivity (TE)'s Potter & Brumfield T92 series two-pole 50A relay is primarily designed for HVAC, industrial controls, power supply, charging, lighting and inverter applications. The improvement on the key components' conductivity and heat dissipation capability of this relay provides improved ratings (T92H type, 50A) and enables usage in higher power and temperature environments such as charging applications.

### Features

- 50A, 277VAC switching capability
- 75A, 277VAC overload capability
- Rated 30A/40A/50A versions available
- High dielectric strength
- Cd-free contact materials available
- Option to replace 30A to 50A contactors

### Applications

- Charging
- HVAC
- Industrial controls
- Power supply
- Lighting

[VIEW PRODUCT DETAILS](#) 



## AVX SCP SERIES PRIZMACAP™ SUPERCAPACITORS



[VIEW PRODUCT DETAILS](#) 

AVX's PrismaCap™ capacitors, or SCP series, are prismatic EDLCs (supercapacitors). The SCP series provides the lowest profile and widest operating temperature available in AVX supercapacitors. Used by themselves or in conjunction with primary or secondary batteries, they provide extended backup time, longer battery life, and provide instantaneous power pulses as needed. They are best used in applications requiring pulse power handling, energy storage, energy/power holdup, and battery assist.

### Features

- Larger capacitance in prismatic form factor
- Widest temperature rating
- Low profile and light weight
- Custom design capabilities

### Applications

- Wearables
- Handhelds
- High temp. industrial
- Bluetooth keyboard
- Battery assist
- Power peripherals
- Tablet/E-reader
- High reliability
- Space constrained designs

## BOURNS CATXXA-LF, CAYXXA-LF AND CAYXXA-AS RESISTOR ARRAYS



[VIEW PRODUCT DETAILS](#) 

These surface mount models help strengthen and further expand the range of surface mount chip arrays offered by Bourns.

The AEC-Q200 compliant model CATxxA-LF concave and CAYxxA-LF convex chip arrays are available in two different widths of 1mm and 1.6mm and contain two or four pieces of isolated thick film resistive elements printed onto a single ceramic substrate.

The model CAYxxA-AS are the first chip arrays from Bourns that are both AEC-Q200 compliant and sulfur resistant based on ASTM-B-809-95, and EIA-977 (test parameter B) standards. They are designed to operate in certain harsh environments exposed to higher levels of sulfur contamination and are suitable for usage within industrial, automation power supply and communication base stations applications.

### Features

#### CAT10A-LF/CAT16A-LF

- RoHS compliant
- Concave terminal style
- Resistance range: 10Ω to 1MΩ
- Zero jumper
- AEC-Q200 compliant
- Automotive grade

#### CAY10A-LF/CAY16A-LF

- RoHS compliant
- Convex terminal style
- Resistance range: 3Ω to 1MΩ
- Zero jumper
- AEC-Q200 compliant
- Automotive grade

#### CAY10A-AS/CAY16A-AS

- RoHS compliant
- Convex terminal style
- Sulfur-resistant design
- Resistance range: 3Ω to 1MΩ
- Zero jumper
- AEC-Q200 compliant
- Automotive grade

### Applications

#### CAT10A-LF/CAT16A-LF

- General purpose
- Industrial
- Consumer
- Telecommunications

#### CAY10A-LF/CAY16A-LF

- General purpose
- Industrial
- Consumer
- Telecommunications

#### CAY10A-AS/CAY16A-AS

- General purpose
- Certain harsh environments
- Agricultural
- Gas, oil and rubber industry
- Telecommunication base stations

## BOURNS GDT25 SERIES GAS DISCHARGE TUBES



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

Bourns has introduced its performance innovating series of 2-electrode Gas Discharge Tubes (GDTs). The model GDT25 next-generation series continues Bourns' legacy of quality, innovation and design in GDT overvoltage surge arrestors and sets a new standard in speed and robustness.

This latest generation GDT provides significant improvements in protection from voltage transients caused by lightning or accidental contact with AC power lines. With improvements driven by computer modeling simulations, the model GDT25 next-generation series provides an enhanced level of voltage limiting during fast rising events resulting in reduced stress on downstream components. In addition, this series has superior current handling capabilities and a wide operating temperature range.

Bourns has announced the release of the GDT25 design kit, part number DK-GDT25-01. This design kit contains five pieces of each GDT25 model to provide design engineers with protection solutions for quick-turn prototype testing.

### Features

- 75V to 600V breakdown voltages
- -55°C to +125°C operation
- Fast response time
- High surge current rating
- Low capacitance and insert loss
- Stable performance throughout life
- Design kit available for quick-turn prototype testing
- UL recognised
- RoHS compliant

### Applications

- Set top boxes
- Industrial communications
- HVAC controls
- xDSL, POTS, G.Fast
- Antennas

## BOURNS MF-MSHT SERIES HIGH TEMPERATURE PPTC RESETTABLE FUSES



[VIEW PRODUCT DETAILS](#) 

The Bourns model MF-MSHT series offers high temperature surface mount Polymer Positive Temperature Coefficient (PPTC) resettable fuses. The series provides Ihold current ratings from 0.20A to 1.75A at the 9V to 42V maximum rated voltage and a maximum operating temperature up to +125°C. The addition of the model MF-MSHT series provides a broader standard high temperature PPTC offering to customers with high working temperature and power rating requirements. The Bourns® model MF-MSHT series utilises Bourns' innovative freeXpansion™ design that increases the performance of the resettable fuse with:

- Higher hold current ratings (Ihold)
- Improved resistance stability
- Higher maximum voltage ratings Vmax.
- Smaller footprints

### Features

- Operating temperature range up to +125°C
- Higher hold currents at elevated temperatures
- Low thermal derating factor
- Standard 1812 footprint size with low profile for space-constrained applications
- RoHS compliant
- cUL and TÜV recognised
- Automotive grade

### Applications

- Overcurrent surge protection of electronic equipment required to operate at high operating temperature ranges
- Robust resettable fault protection for industrial transportation, communication, security and consumer electronic equipment

## BOURNS SM353230-181N7Y/SM453230-121N7Y/SM453230-181N7Y TRANSFORMERS



[VIEW PRODUCT DETAILS](#) 

Bourns has introduced the model SM353230-181N7Y, SM453230-121N7Y and SM453230-181N7Y gigabit Ethernet chip LAN 1G/2.5G/5G and 10G base-T transformers.

Unlike traditional LAN magnetics built with multiple toroidal core transformers and common mode chokes in a single module, a chip LAN transformer is a discrete, centre-tapped component wound on a drum core and capped with a ferrite plate to emulate the result of the close magnetic path of a toroid core. Bourns has paired a common mode chip inductor with a chip LAN transformer to provide EMI suppression. The discrete transformer/common mode chip inductor arrangement offers a high degree of flexibility in a PCB layout.

The model SM353230-181N7Y, SM453230-121N7Y and SM453230-181N7Y gigabit Ethernet chip LAN transformers are IEEE 802.3 Ethernet compatible with an operating temperature range of -40°C to +85°C. They are ideal for use in LAN interfaces for a variety of high-speed telecommunication and network devices.

### Features

- IEEE 802.3 Ethernet compatible
- Compatible with 1G/2.5G/5G/10G base-T
- Discrete transformers and common mode chokes for flexible PCB layout
- Pairs a common mode choke for EMI suppression
- Expanded temperature range: -40°C to +85°C
- RoHS compliant and halogen free

### Applications

- High-speed telecommunication and network devices

## BOURNS SM42002EL/SM42P01EL/SM43001EL/SM43P01EL LAN TRANSFORMERS



[VIEW PRODUCT DETAILS](#) 

Bourns has introduced the model SM42002EL, SM42P01EL, SM43001EL and SM43P01EL gigabit Ethernet chip LAN 1G/2.5G/5G and 10G base-T transformer modules with PoE+ available.

Each transformer module is constructed with four discrete chip LAN transformers and four common mode chokes assembled on a PCB with a ferrous metal shield which offers customers a quick and simple assembly solution. These modules are pin-to-pin compatible with the traditional potted case LAN transformer and offer a lower profile and superior coplanarity. With a common mode choke paired with each transformer, the module offers a high degree of attenuation for EMI suppression.

These chip LAN transformer modules are compliant with IEEE 802.3 and are ideal for use in LAN interfaces for a variety of high-speed telecommunication and network devices.

### Features

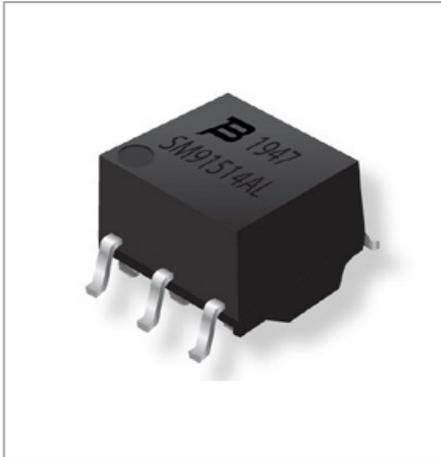
- IEEE 802.3 Ethernet compatible
- Compatible with 1G/2.5G/5G/10G base-T
- PoE+ available for some models
- Common mode choke for EMI reduction
- Superior coplanarity
- RoHS compliant and halogen free

### Applications

- High-speed telecommunication and network devices

[BUY NOW](#) 

## BOURNS SM91514AL SERIES AEC-Q200 COMPLIANT BMS SIGNAL TRANSFORMER



[VIEW PRODUCT DETAILS](#) 

Bourns has introduced the model SM91514AL AEC-Q200 compliant BMS (Battery Management System) signal transformer. This single channel functional insulation transformer includes common mode chokes for noise rejection in BMS applications.

The model SM91514AL was developed for use with the NXP model MC33771C series and the Maxim model Max17853. The full automation of each key manufacturing process for this model, including pin winding and laser stripping, results in a superior quality product. This BMS transformer offers a working voltage up to 1,000VDC and hi-pot isolation voltage up to 4,300VDC with an extended operating temperature range of -40°C to +125°C.

### Features

- Superior quality from full automation of key manufacturing processes
- Up to 1,000VDC working voltage and hi-pot up to 4,300VDC
- Supports serial daisy chain IsoSPI communication
- Developed for use with the NXP model MC33771C series and Maxim Max17853
- AEC-Q200 compliant
- Automotive grade
- RoHS compliant

### Applications

- Battery management systems
- Energy storage systems

## BOURNS SRF3225AB/TAC 1210-SIZE AUTOMOTIVE GRADE COMMON MODE CHIP INDUCTORS



[VIEW PRODUCT DETAILS](#) 

Bourns has introduced the model SRF3225AB and SRF3225TAC 1210-size automotive grade common mode chip inductor series. These automotive grade common mode inductors are constructed with a ferrite core and are bifilar-wound delivering a compact size, shielded construction for low radiation and high impedance over a broad frequency range to suppress Electromagnetic Interference (EMI) coming into or leaving the system. The 0.2mm/0.3mm height side-wall terminal at each end of the inductor core helps enhance the component's mechanical strength after it is assembled on the board.

The model SRF3225AB and SRF3225TAC series are AEC-Q200 compliant for high reliability and durability applications. The model SRF3225AB was designed for noise suppression in 2-wire UTP (Unshielded Twisted Pair) cable automotive audio bus systems. The SRF3225TAC series is focused on common mode noise suppression for Classic CAN and higher data rate CAN-FD Class II applications.

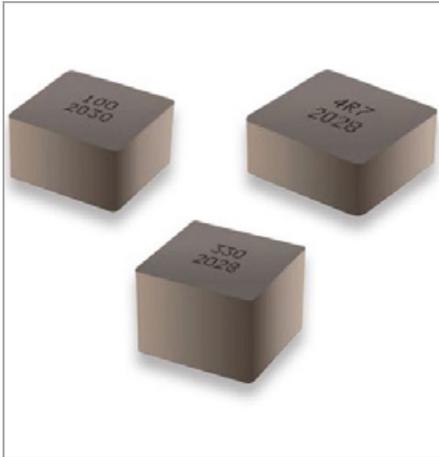
### Features

- Bifilar-wound
- Shielded construction for low radiation
- High impedance, wide EMI suppression
- Frequency range
- AEC-Q200 compliant
- Meets IEC 62228-3 standard
- (model SRF3225TAC-101Y)
- RoHS compliant and halogen free
- Automotive grade

### Applications

- Noise filters
- EMI suppression for data and signal lines
- 2-wire UTP cable automotive audio bus systems
- CAN and CAN-FD Class II

## BOURNS SRP15XXCA HIGH CURRENT SHIELDED POWER INDUCTORS



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

Bourns has introduced the model SRP1580CA, SRP1510CA and SRP1513CA AEC-Q200 compliant high current shielded power inductor series that are designed to meet today's high current density and high temperature requirements of various electronic applications. These inductor series are manufactured with a flat wire and a metal alloy powder core featuring low DC resistance, high heating/saturation current, low buzz noise, excellent temperature stability and shielded construction for low magnetic field radiation.

The model SRP1580CA, SRP1510CA and SRP1513CA series have an operating temperature range of -55°C to +155°C and are well suited for use in DC-DC converters and power supplies in consumer, industrial, and telecom electronics applications where higher inductor reliability may be required.

### Features

- Shielded construction
- Metal alloy powder core
- High saturation current
- Low buzz noise
- Flat wire
- AEC-Q200 compliant
- RoHS compliant and halogen free

### Applications

- DC-DC converters
- Power supplies

## BOURNS SRP7028AA, SRP7050AA AND SRP1038AA SERIES AUTOMOTIVE GRADE HIGH CURRENT SHIELDED POWER INDUCTORS



[VIEW PRODUCT DETAILS](#) 

Bourns has introduced the model SRP7028AA, SRP7050AA and SRP1038AA automotive grade high current shielded power inductor series that are designed to meet today's high current density and high temperature requirements of various electronic applications. These inductor series are manufactured with a metal alloy powder core featuring low DC resistance, high heating/saturation current, low buzz noise, excellent temperature stability and shielded construction for low magnetic field radiation.

A few years ago, Bourns released a similar design, the model SRP7028A, SRP7050TA and SRP1038A high current shielded power inductor series manufactured with a carbonyl iron powder core. Compared to the previous design, the model SRP7028AA, SRP7050AA and SRP1038AA series feature lower DCR, higher I<sub>rms</sub> current and a more robust core structure. The model SRP7028A, SRP7050TA and SRP1038A series also have a higher saturation current rating.

The model SRP7028AA, SRP7050AA and SRP1038AA are AEC-Q200 compliant with an operating temperature range from -55°C to +155°C and are well suited for DC-DC converters and power supplies in consumer, industrial, and telecom electronics applications in which higher inductor reliability may be required.

### Features

- Shielded construction
- Metal alloy powder core
- High saturation current
- Low buzz noise
- AEC-Q200 compliant
- RoHS compliant and halogen free
- Automotive grade

### Applications

- DC-DC converters
- Power supplies (consumer, industrial, and telecom electronics)

## KEMET A798 SERIES ALUMINUM POLYMER CAPACITORS



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

The KEMET A798 Aluminum Organic Capacitor (AO-CAP) is a solid state aluminum capacitor. The cathode is a conductive organic polymer, which results in very low ESR and improved capacitance retention at high frequency. AO-CAPs may be operated at steady state voltages up to 100% of rated voltage without the need to de-rate.

Since there is no liquid electrolyte, the A798 offers long operational lifetimes, low ESR, and high operational temperatures. The inherent low ESR renders the A798 suitable for high ripple current handling. The small package size, high ripple current capability, high operating temperature, low parasitics, and capacitance stability over life span makes the A798 ideal for demand applications.

The A798 high humidity and high temperature aluminium polymer capacitors deliver higher capacitance and ESR stability under harsh environmental conditions. Enhancements to the design and selected material upgrades were introduced to deliver 1,000 hours at +85°C/85% RH rated voltage and +125°C endurance life and storage.

### Features

- ESR: 9mΩ
- Polymer cathode technology
- High frequency capacitance retention
- Non-ignition failure mode
- 100% accelerated steady state aging
- 100% surge current tested
- Volumetric efficiency
- Self-healing mechanism
- EIA standard case sizes

### Applications

- DC-DC converters
- Notebook PCs
- Telecommunications
- Displays
- Industrial applications with harsh humidity and temperature requirements

## KEMET AE SERIES RESIN COATED MULTILAYER PIEZOELECTRIC ACTUATORS



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

Multilayer piezoelectric actuators are ceramic elements used to convert electrical energy into mechanical energy such as displacement or force by utilising the piezoelectric longitudinal effect.

KEMET's multilayer piezoelectric actuators are produced based on KEMET's unique element structure design and piezoelectric ceramic materials with high electrostrictive factors. Compared to conventional piezoelectric actuators, they are smaller in size but can generate higher displacements and forces at low voltages.

The resin coated AE series actuators feature compact size and a wide variety of shapes for applications such as ultrafine positioning mechanism and drive sources.

### Features

- Large generated force of 3,500N/cm<sup>2</sup>
- Operating temperature range from -25°C to +85°C
- High-speed response: driving up to about 1/3 of self resonant frequency (in several 10kHz)
- Low power consumption: can be retained at the leakage current state of 100µA or less
- Very small size: 1/10 or smaller than conventional multilayer actuators
- RoHS/REACH compliant

### Applications

- Typical applications include positioning, auto focusing of optical systems, pumps, mass-flow valves, vibration source, vibration controls, sensors, image stabilisation of DSC, mirror/prism positioning, manipulators, motors and printer.

## KEMET AER SERIES RESIN COATED MULTILAYER PIEZOELECTRIC ACTUATORS



[VIEW PRODUCT DETAILS](#) 

Multilayer piezoelectric actuators are ceramic elements used to convert electrical energy into mechanical energy such as displacement or force by utilising the piezoelectric longitudinal effect.

KEMET's multilayer piezoelectric actuators are produced based on KEMET's unique element structure design and piezoelectric ceramic materials with high electrostrictive factors. Compared to conventional piezoelectric actuators, they are smaller in size but can generate higher displacements and forces at low voltages.

The resin coated, ring shape AER series actuators feature compact size for applications such as ultra-fine positioning mechanism and drive sources.

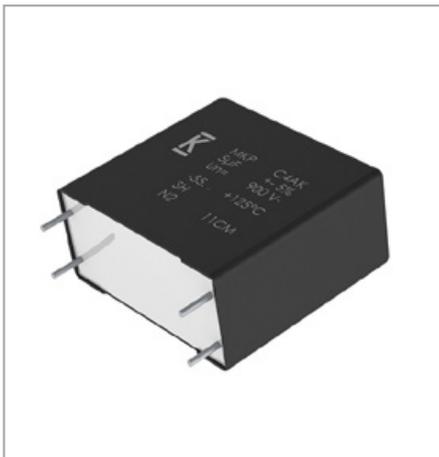
### Features

- Ring shape
- Operating temperature range from  $-25^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$
- High-speed response: driving up to about 1/3 of self-resonant frequency (in several 10kHz)
- Low power consumption: can be retained at the leakage current state of  $100\mu\text{A}$  or less
- RoHS/reach compliant

### Applications

- Typical applications include positioning, actuating, control and phase shift of laser. Since the laser can be passed inside the piezo ring, it can be used to adjust the phase and wavelength of the laser
- Semiconductor manufacturing system, precision machinery, mechatronics, optical equipment, communications, medical equipment and measuring instruments are just a few examples where these products can be used

## KEMET C4AK AUTOMOTIVE GRADE METALLIZED FILM CAPACITOR



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

The C4AK capacitor is a polypropylene material metallised film capacitor with a rectangular, plastic boxtype design (black colour) filled with resin, and uses 2 tinned wires.

Automotive grade devices meet the demanding Automotive Electronics Council's AEC-Q200 qualification requirements with longer life at  $+125^{\circ}\text{C}$  (higher voltage derated) and  $+135^{\circ}\text{C}$ .

### Features

- High voltage and long life at  $+125^{\circ}\text{C}$
- Voltage derated at  $+135^{\circ}\text{C}$
- Self-healing
- Low loss
- Low ESL
- Low profile dimensions available under request
- High ripple current
- High dV/dt
- High capacitance density
- High contact reliability
- Suitable for high frequency applications
- Automotive grades (AEC-Q200)

### Applications

- DC filtering
- DC link
- Power electronics
- Energy storage
- Renewable energy grid interface motor drives
- Automotive applications

## KEMET MPEV SERIES AEC-Q200 POWER INDUCTORS



The KEMET MPEV metal composite inductors are ideal for use in DC-DC switching power supplies for automotive applications. The metal composite core has high saturation characteristics maintaining functionality with high current transients and is characterised by temperature stable inductance. The high heat resistance propriety of the inductor has been further improved and allows for operating temperature up to +180°C.

### Features

- Metal composite powder
- Shielded construction, SMD configuration
- Inductance range from 0.47µH to 47µH
- Operating temperature up to +180°C
- Low acoustic noise
- Low magnetic flux leakage
- AEC-Q200 qualified

### Applications

- LED headlights
- Meter cluster panels
- Head-Up Displays (HUD)
- Electric Water Pumps (EWP)
- Electric Oil Pumps (EOP)
- Electric Power Steering (EPS)

[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

## PANASONIC INDUSTRY FH SERIES ALUMINIUM ELECTROLYTIC CAPACITORS



Panasonic Industry V-FH long life type of its SMT aluminum electrolytic capacitor range comes with excellent temperature characteristics. Good performance features are only worth something if they last. Only then can there be any talk of reliability. So, the durability and life-cycle of an electrical component is vital for the reliability of an entire application, let it be a simple smart home device or an industrial application's power supply.

Panasonic focused on the evolution of durability: the series comes with proven 10,000 hours at +105°C (ø6x8: 7000hrs; 50V: 7000hrs) and is currently available in 6.3VDC to 50VDC, 10µF to 680µF.

Thus, it qualifies for employment in long-lasting applications, from smart lighting products, IT equipment and infotainment systems up to heavy industry contexts where a persistent performance is a prerequisite.

Next to a particularly low ESR and a high temperature reflow, the developers at Panasonic Industry had also environmental criteria in mind: the series is RoHS compliant and available as halogen-free version. The V-FH caps are certainly on the shortlist for anyone serious about the longevity of their product designs.

[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

### Features

- Endurance: +105°C, 10000hrs (ø6x8 : 7000hrs; 50V: 7000hrs)
- Long life : 40% to 100% higher than series FK (suffix G)
- Not AEC-Q200 compliant
- RoHS compliant

## PANASONIC INDUSTRY ZSU SERIES POLYMER HYBRID ELECTROLYTIC CAPACITORS



[VIEW PRODUCT DETAILS](#) 

[BUY ZSU-A NOW](#) 

[BUY ZSU-V NOW](#) 

Panasonic Industry ZSU series of electrolytic polymer hybrid capacitors type is standing out with a capacitance increase of 80% in comparison to the recent ZS series.

Reliability, efficiency, performance. This triad of automotive engineering applies in particular to the crucial components a modern car consists of. And there is an increasing number of them, as the level of comfort, functionality and safety is increasing with every new car generation.

Acknowledging those prevalent industry trends, Panasonic Industry has developed its popular ZS series with outstanding successors, such as the ZSU series, that comes with an almost unrivalled capacitance. Moreover, the ZSU hybrids reveal a 4,000 hours temperature endurance at +125°C and thus one of the highest tolerance currently available in the industry.

Speaking of tough conditions “under the hood” or elsewhere in industrial environments, Panasonic Industry offers vibration proof versions for 6mm diameter or above, withstanding shocks of as much as 30G.

The ZSU series is currently available in 25VDC to 63VDC/120µF to 1000µF and an interesting option wherever high temperature and next-gen capacitance is the criterion of choice. That would be, first and foremost, many automotive 48V applications such as oil pumps, EPS, e-compressors or ADAS applications. The latest capacitor innovation of course is AEC-Q200 compliant.

### Features

- Endurance: 4,000hrs at +125°C
- Large capacitance compared with ZS series
- THT type: taping products for automatic insertion
- Vibration-proof product is available upon request
- AEC-Q200 compliant
- RoHS compliant

## PANASONIC INDUSTRY ZU SERIES POLYMER HYBRID ALUMINIUM ELECTROLYTIC CAPACITORS



[VIEW PRODUCT DETAILS](#) 

Panasonic Industry ZU and ZSU series of electrolytic polymer hybrid capacitors type are each one being a remarkable evolution of the recent ZS series in specific aspects. Reliability, efficiency, performance. This triad of automotive engineering applies in particular to the crucial components a modern car consists of. And there is an increasing number of them, as the level of comfort, functionality and safety is increasing with every new car generation.

Acknowledging those prevalent industry trends, Panasonic Industry has developed its popular ZS series of hybrid capacitors with outstanding successors: when developing the ZU types (25VDC to 63VDC at 8mΩ to 12mΩ), the focus has been set to particularly reducing power dissipation, while the ZSU series (25VDC to 63VDC, capacitance 120uF to 1,000uF) comes with an almost unrivalled capacitance.

Speaking of tough conditions “under the hood” or elsewhere in industrial environments, Panasonic Industry offers the AEC-Q200 compliant types as vibration proof versions for 6mm diameter or above, withstanding shocks of as much as 30G. So, ZU series suits wherever high ripple current is essential, for example automotive 48V applications such as Integrated Starter Generators (ISG), DC-DC, oil pumps, water pumps or fan motors.

The ZSU series, however, is an option when it additionally comes to applications requiring next-gen. capacitance: EPS, e-compressors and ADAS applications or as well oil-pumps and the like.

### Features

- Endurance: 4,000hrs at +135°C
- High ripple current compared with ZS series
- Vibration-proof product is available upon request
- AEC-Q200 compliant
- RoHS compliant

## SCHURTER FMBC EP SERIES DOUBLE-STAGE FILTERS



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

SCHURTER has introduced the FMBC EP double-stage filter family for 3 phase systems. Thanks to its particularly compact dimensions and high performance, the filter series is ideally suited for the tight space conditions in today's machine and industrial plant construction. Due to versions with high nominal voltages, a particularly wide field of applications is possible.

Space is scarce in control cabinets for industrial applications in the 3-phase range. SCHURTER has addressed this problem with another complete filter redesign, which is much more compact than previous generations. The almost cuboidal design makes optimum use of the space in the housing. Thanks to a double-stage filter and the use of the highest quality components (generously dimensioned film capacitors, chokes with highly permeable cores), the development shines with exceptional broadband filter attenuation.

### Features

- Compact design with small footprint
- Double-stage filter for high attenuation
- High voltage versions
- Wide temperature range
- Voltage rating 520VAC or 760VAC for various applications
- Protection against interference voltage from the mains

### Applications

- Especially designed for industrial applications
  - > frequency converters, stepper motor drives, UPS-systems, inverters
- Suitable for use in equipment according to IEC/UL 62368-1

## SCHURTER UMT-H SERIES 40A AND 50A FUSES



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

The SMD ceramic fuses of the UMT-H family have been expanded in the form of a 40A and a 50A version. SCHURTER offers the UMT-H with its time-lag T characteristic in a total of 26 rated currents between 160mA and 50A.

The UMT-H SMD ceramic fuse now covers a current range from 160mA to 50A at voltages of up to 277VAC and 250VDC. This makes the cuboid fuse ideal for cost-efficient automated assembly. Its large solder pads ensure excellent heat dissipation.

### Features

- High breaking capacity up to 1,500A
- High rated voltages up to 277VAC/250VDC
- Compact design
- Suitable for pulse-shaped continuous current

### Applications

- Primary protection on SMD PCBs
- Sensors
- Power supplies
- Intrinsically safe
- Illumination
- Battery protection

## TE CONNECTIVITY HCH SERIES ALUMINUM HOUSED BRAKING RESISTORS



TE Connectivity (TE) aluminum housed braking resistors HCH series are wire wound power resistors, designed and tested to absorb high power overloads. They are suited for energy braking, power supply, robotics and automation control applications. Aluminum housed braking resistors HCH series were tested by applying the specified overload power for 1s or 5s or 40s within a 120s cycle comprising of both ON and OFF periods. These are equivalent to duty cycles of 0.83%, 4.16% and 33.3% which are typical braking cycles used in drive systems.

### Features

- High power overload capability
- IP54 ingress protection
- PTFE insulated flying leads for connection flexibility
- Four variants (200W to 500W at +40°C)
- Available in 5% and 10% tolerances

### Applications

- Energy braking
- Power supplies
- Frequency convertors
- Robotics
- Automation controls

[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

## VISHAY MKP1847C AC FILTERING FILM CAPACITORS



Vishay Intertechnology series of metallised polypropylene AC filtering film capacitors is optimised for high humidity environments. Vishay Roederstein MKP1847C AC filtering devices withstand demanding Temperature Humidity Bias (THB) testing –40°C, 93% relative humidity for 56 days at rated voltage without altering their electrical characteristics.

- Designed to ensure extremely stable capacitance and ESR values over a long service life under harsh environmental conditions during operation
- Compared to previous-generation devices, the MKP1847C AC filtering series offers higher humidity robustness at a lower cost, while maintaining the same footprint

### Features

- Withstand THB testing –40°C, 93% relative humidity for 56 days at rated voltage
- Wide capacitance range from 1µF up to 70µF, with tolerance down to ±10%
- Rated voltages of 230VAC, 250VAC, 275VAC, 310VAC and 350VAC
- Low self-inductance of <1nH per mm of lead spacing
- High peak current capabilities up to 750A
- High RMS current up to 26A
- Offered in a flame-retardant plastic case with a resin seal
- High operating temperature to +105°C

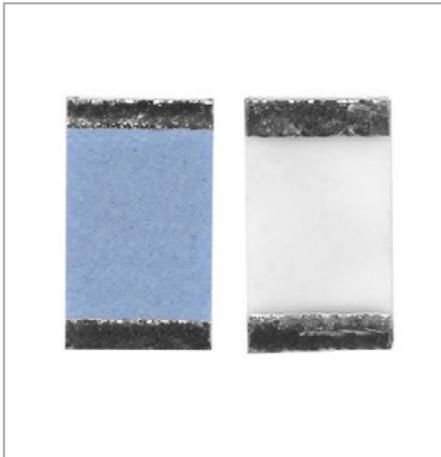
### Applications

- Input and output filtering in UPS systems, renewable energy inverter grid interfaces, and welding equipment

[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

## VISHAY P2TC HIGH PRECISION THIN FILM CHIP RESISTOR



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

Vishay Intertechnology high precision thin film wraparound chip resistor is made for industrial, medical, military and aerospace applications. The Vishay Sfernice P2TC offers a tight TCR of  $\pm 2\text{ppm}/\text{C}$  over wider resistance and temperature ranges and in more case sizes with higher power ratings than competing devices.

- The resistor's specifications exceed the requirements of MIL-PRF-55342G
- The P2TC is optimised for precision applications requiring low noise and high stability over time and temperature

### Features

- Tight TCR of  $\pm 2\text{ppm}/\text{C}$
- Wide resistance range of  $100\Omega$  to  $3.05\text{M}\Omega$
- Tolerances down to  $\pm 0.01\%$
- Available in five case sizes from 0402 to 2010
- Broad temperature range of  $-55^\circ\text{C}$  to  $+155^\circ\text{C}$
- High power rating to 1W
- Very low noise of  $< -35\text{dB}$
- Low voltage coefficient of  $< 0.01\text{ppm}/\text{V}$
- Load-life stability of  $\pm 0.05\%$  typical for 2,000 hours at  $+70^\circ\text{C}$
- RoHS-compliant, halogen-free, and Vishay green
- Sulfur-resistant per the ASTM B809-95 humid vapour test

### Applications

- Instrumentation, military and avionics guidance systems, load cell electronics in weighing systems, and operational amplifiers for test and measurement equipment



## AIMTEC AM1XX-JZ/AM2XX-JZ SERIES



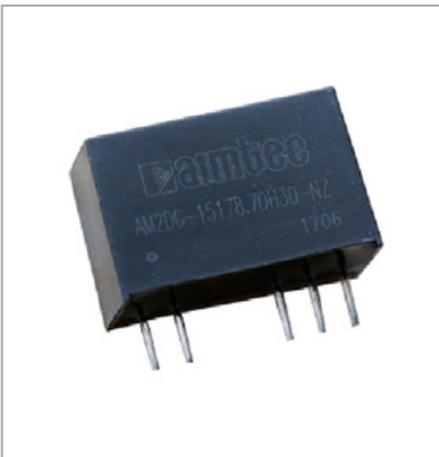
[VIEW PRODUCT DETAILS](#) 

Aimtec has introduced 9 series of 1W and 2W DC-DC converters. These converters have been completely redesigned to enhance performance and offer excellent economies of scale compared to the previous generation while maintaining the same footprint and SIP, DIP and SMD pinouts.

Some of the performance improvements include the following:

1. The converters do not compromise the OCP (Over Current Protection) vs. maximum capacitive load capabilities, thus eliminating the mutual constraints of the OCP, maximum capacitive load and start-up capability. These converters have a maximum capacitive load of up to 2,400uF.
2. These DC-DC enclosed solutions improve the light load and full load efficiencies when compared to the previous generation products. This is ideal for application environments like the RS485 or the CAN bus that typically have a light load, typically under 5mA.
3. The DC-DC converters are more reliable and have a higher MTBF.

## AIMTEC AM2DG-NZ SERIES



[VIEW PRODUCT DETAILS](#) 

Aimtec AM2DG-NZ series is a high-performance power supply unit which offer a dual output channel that can power IGBT gate drivers.

The AM2DG-NZ can accept a conventional input of 12VDC and provide dual output voltages of +15V and -8V that can power the gate drivers. With an extremely wide operating temperature from -40°C to +105°C, this series offers a reliable power source for the IGBT drivers or inverters in high ambient temperature environments. The tested I/O isolation of up to 3,500VAC gives the system great withstand voltage protection.

Additionally, this series offers a compact SIP7 package that can save the circuit designer's PCB board space. With continuous short-circuit protection and a high MTBF of 3,500,000hrs, the AM2DG-NZ is suitable for grid power, EV charging station, instrumentation, PV inverter, industrial motor driver, IGBT gate driver, and AGV application.

### Features

- I/O isolation up to 3,500VAC
- SIP 7 multiple manufacturers pin compatible
- Efficiency up to 81%
- Extended temperature range: -40°C to +105°C
- Ultra-low isolation capacitance
- Continuous short circuit protection

## AIMTEC AM3S-Z SERIES 3W DC-DC CONVERTER



[VIEW PRODUCT DETAILS](#)

Aimtec has introduced its 3W single output high isolation DC-DC converter in a compact SIP4 package. With various input voltage options like 5V, 12V and 24VDC, 3,000VDC isolation and an unregulated output, the AM3S-Z will offer benefits to your new system design. This is the smallest high isolation 3W DC-DC converter in the Aimtec's SIP4 package family. This compact design comes with a high efficiency up to 91%, no minimum load requirement and continuous short circuit protection. Furthermore, the ambient operating temperature is from -40°C to +100°C with full power up to +90°C. This innovative series can be used for applications that have limited board space such as mobile device chargers, portable electronics, IoT and wireless applications.

### Features

- Operating temp.: -40°C to +100°C
- High isolation voltage: 3,000VDC
- Low ripple and noise, 100mV(p-p), max.
- Unregulated output
- Efficiency up to 91%
- SIP4type package

### Applications

- Power grid
- Industrial
- Telecom
- Instrumentation

## AIMTEC HAMJZ SERIES



[VIEW PRODUCT DETAILS](#)

Aimtec HAMJZ is a series of open-frame and enclosed AC-DC converters. These product series are designed to meet EN60335-1, EN61558-1, EN62368-1, and EN60601-1 standards, thus enabling them to be used in a wide range of applications such as home appliances, medical and industrial applications.

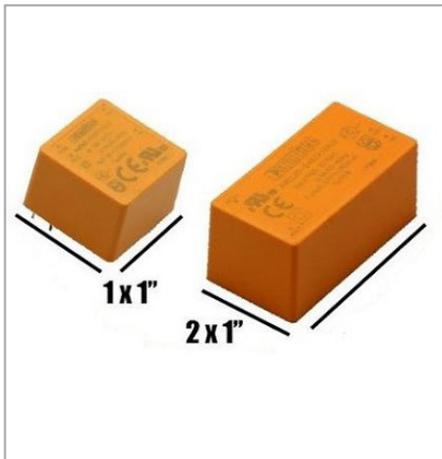
The HAMJZ product family ranges from 65W to 350W and can accept a universal input voltage range of 85VAC to 264VAC and provide 3.3V, 5V, 9V, 12V, 15V, 24V, 36V, 48V and 54V output voltage options.

With a low no-load power consumption, these products are a good fit for equipment that do not need to operate continuously. This family of products can achieve CISPR32 Class B and a ESD contact immunity of ±8KV and an air immunity of ±15KV without external components. The EFT of ±2KV/surge L-L of ±2KV are also standard EMC features for the -HAMJZ family.

The HAMJZ family is designed to meet IEC/EN60601-1 with 2xMOPP along with 4,000VAC of reinforced insulation which is a good fit for medical applications.

Finally, these AC-DC converters have a small footprint and low component height, which offers more flexibility in designing the end product. With a standard JST connector, these products are easy and quick to install as they do not need soldering.

## AIMTEC MUST-HAVZ ORANGE SERIES



[VIEW PRODUCT DETAILS](#)

Aimtec Must-HAVZ lineup of AC-DC converters covers a power range of 3W to 20W, characterised by its orange cases. They have been designed to meet EN60335 (household and similar electrical appliances), EN61558 (power transformers, power supplies, reactors, and similar products) and EN62368 (information technology equipment and audio/video equipment) safety standards. This makes the Must-HAVZ ideal for industrial, home appliances and related applications.

For medical customers, the AMEL15-277HAVZ and AMEL20-277HAVZ series are also designed to meet EN60601 and provide 2xMOPP protection. This enables the converters to power a wide range of medical equipment and applications.

The Must-HAVZ lineup can accept an input voltage of 85VAC to 305VAC and provide standard 3.3V, 5V, 9V, 12V, 15V, 24V output options and can achieve CISPR32 Class B and ESD immunity of contact  $\pm 6$ KV, air  $\pm 8$ KV without external components. To further increase EMC performance of the lineup, they can be paired with external circuits to achieve EFT  $\pm 2$ KV/surge L-L  $\pm 1$ KV immunity or EFT  $\pm 4$ KV/surge L-L  $\pm 2$ KV immunity.

To power the appliance control circuits, the converters come standard with 4,000VAC reinforced insulation, which offers enhanced protection and a no-load power consumption of 0.12W. This increases the end product efficiency.

Furthermore, thanks to its compact size, this lineup offers high power densities across all power ranges. Having a small footprint and low component height allows engineers to have more flexibility when designing under space constrained PCBAs. The dimensions of the 3W and 5W models are a mere 1" x 1" x 0.7". The 10W model offers double the power in a 1.58" x 1" x 0.83" case. Finally, the 15W and 20W options come in 1.87" x 1.06" x 0.92" and 2.06" x 1.07" x 0.94" respectively.

## ARTESYN AIF06ZPFC SERIES 2400W FULL BRICK PFC CONVERTERS



[VIEW PRODUCT DETAILS](#)

The AIF06ZPFC series full-brick power factor correction module accepts a wide 85VAC to 264VAC input and presents a unity power factor. Rated at 2,400 watts, the module has a high conversion efficiency of 97.3% and provides a nominal non-isolated output voltage of 400VDC. Featuring an industry-standard 2.4" x 4.6" (61mm x 116.8mm) full-brick form factor and a height of only 0.55" (13.7mm), they have a power density of 395 watts per cubic inch.

AIF06ZPFC series PFC modules offer extensive monitoring, protection and adjustment facilities. Remote communications are supported by a built-in PMBus interface and there is an internal memory for user data storage. The modules feature accurate current sharing for parallel operation and there is an optional version for applications that require 3 or more module, which requires external rail rectifiers.

The AIF06ZPFC also features an internal inrush limiting function that eliminates the requirement to provide this function externally, significantly simplifying application design and realisation with increased overall efficiency.

Based on an encapsulated design that incorporates a thermal baseplate, the AIF06ZPFC series PFC module has a very high power density of 395 watts/in<sup>3</sup>. It accommodates a baseplate operating temperature range of -20°C to +100°C and can start up from temperatures as low as -40°C.

### Features

- 2,400W continuous power high-line
- 1,400W continuous power low-line
- Ultra high efficiency: 97%
- 85VAC to 264VAC input range
- Baseplate optimised for contact cooling or heatsink mounting
- Fixed switching frequency
- Pre-bias startup capability
- Programmable phase shift angle in parallel application
- High reliability
- RoHS 6 compliant

### Applications

- Industrial
- Medical

## BEL POWER SOLUTIONS ORQB-50Y SERIES



[VIEW PRODUCT DETAILS](#) 

Bel Power Solutions ORQB-50Y series is a rugged 50W quarter brick isolated DC-DC converter. The ORQB-50Y series provides 50W single output voltages of 5V, 12V, 15V, 24V and 48V from an ultra-wide input range from 14.4VDC to 154VDC and operates on all nominal battery voltages from 24V to 110V with one module, making it ideal for railway and harsh industrial applications.

The ORQB-50Y series is designed for embedded computing, communication and control systems, such as Ethernet switches, TCMS, passenger information systems, on-board WLAN, PoE applications and door control.

Standard features include remote ON/OFF, input under- and over-voltage protection, output over-voltage protection, over-current and short-circuit protection. This converter also provides a 5V/5mA auxiliary supply, which is typically used for wake-on-LAN applications. The hold-up circuit achieves a 10ms interruption time with smaller amount of external capacity and saves board space. Conformal coated PCB is used for environmental ruggedness; also approved to IEC/EN/CSA/UL 62368-1 and designed in accordance to EN 50155.

## BEL POWER SOLUTIONS EOS EZVC SERIES



[VIEW PRODUCT DETAILS](#) 

This miniature and energy efficient product series of external desktop adaptors will be available from 20W to 65W in audio/video, Information Technology Equipment (ITE) and medical grade complying with the latest energy efficiency Level VI standards.

It will be available with standard jack plug connectors and customised DC connection options upon request. AC input C6/C8/C14 standard and modified options will be available in the same product size. These adaptors suit a wide variety of cost-sensitive industrial and medical applications while maintaining industry-leading performance.

The eZVC 20W to 65W adapter series will replace EOS SG/FS/NS/EVC/MVC series of adaptors.

### Features

- Energy efficiency Level VI
- Medical and AV/ICT approvals
- C6, C8, C14 input type option
- Output voltage from 12V to 58V
- IEC/EN/UL 62368-1:2018 Class I and Class II
- IEC/EN/ANSI/AAMI 60601-1 AMD1 Class I and Class II
- EMC 6060-1-2 4<sup>th</sup> edition
- Limited Power Source (LPS)
- DC LED signal options
- Miniature size

## DELTA MEG-3K0A9



[VIEW PRODUCT DETAILS](#) 

The MEG-3K0A9's power density is up to 27W/in<sup>3</sup> in 7" x 10" x 1.59" package with a total output of 3,000W up to 18 isolated outputs. Each individual output can be configured between 2VDC to 60VDC, output current up to 45A with single slot single output module, up to 100A with a triple slot single output module. Features included current sharing, PC GUI for easy parameter setting and monitoring, and intelligent fan speed control. Communication adapter can convert PMBus to USB, RS232 or RS485 interface and also available for 3 input connector options; EU terminal, US terminal and C22. Major approvals include IEC/EN/CSA 60601-1 (medical) and IEC/EN/UL/CSA 62368-1 (industrial). The MEG-3K0A series is certified for EMC standards EN 55011 for Industrial, Scientific and Medical (ISM) radio-frequency equipment, and EN 55032 for Industrial Technology Equipment (ITE) radio-frequency equipment. Full compliance with RoHS Directive for environmental protection.

### Features

- Up to 3,000W in 7" x 10" x 1.59" package
- Up to 27W/inch<sup>3</sup> power density
- Full power up to +50°C ambient
- 9 slots modules configurable
- 2xMOPP isolation for medical application
- Output selectable from 2V to 60V
- Current sharing
- Class B conducted and radiated EMI
- IEC 60601-1-2 4th edition immunity compliance
- Normal and reversed option for global remote ON/OFF and air flow direction without power de-rating
- Analog and digital voltage trimming

- PMBus Ver 1.3 supported
- Intelligent fan speed control
- Optional RS485/RS232/USB communication adapters
- PC GUI for easy parameter setting and monitoring

## DELTA MEU-650A24T



[VIEW PRODUCT DETAILS](#) 

The MEU-650A24T can deliver up to 650W with forced air or 450W convection cooled, in a standard footprint 4" x 6". It is equipped with a 12V/0.6A fan output and 5V/2A standby output. High efficiency up to 95.5%, high power density up to 17.2W/inch<sup>3</sup> and a wide operating temperature range of -20°C to +70°C (full power available to +50°C). The MEU-650A24T is suitable for various applications such as ultrasound, anesthesia and IT equipment.

### Features

- Convection/force air cooled
- Up to 650W in 4" x 6" x 1.575" package
- Up to 17.2W/inch<sup>3</sup> power density
- Full power up to +50°C ambient
- High efficiency up to 95.5%
- Up to 500kHrs MTBF
- 2 x MOPP isolation
- Suited for BF type medical products
- 5V/2A standby output
- 12V/0.6A fan output
- Current sharing
- Conformal coating (optional)
- Class B conducted and radiated EMI
- IEC 60601-1-2 Ed.4 immunity compliance
- Normal and reversed option for remote ON/OFF and power good signal
- Voltage trimming

### Applications

- Medical:
  - > Ultrasound
  - > Anesthesia
  - > IT equipment

## EATON EPM78VX AND EPM12V DC-DC CONVERTERS



[VIEW PRODUCT DETAILS](#)

Eaton Power Modules (EPM) are non-isolated DC-DC converters available in two families; the EPM78Vx and EPM12V. These products have higher efficiencies than popular linear regulators and offer a wide input voltage range, lower power consumption, and programmable features in a compact package. EPM has operating temperatures ranging from -40°C up to +90°C and complies with the EN62368 safety standard. Both families also offer short circuit protection to protect the module during overcurrent events.

### Features

#### EPM78Vx

- Switching regulator, non-isolated DC-DC converter
- Convenient 3-pin SIP package compatible with LM78xx linear regulator
- Input voltages: 4.75VDC to 32VDC
- 6 SKU's representing 6 output voltages (1.8V to 15V) @ 1A output current

#### EPM12V2

- Non-isolated DC-DC converter
- 3VDC to 14.4VDC input voltage range
- Efficiency up to 91%
- Operating ambient temperature from -40°C to +90°C

#### EPM12V1

- Non-isolated DC-DC converter
- 3VDC to 14VDC input voltage range
- Efficiency up to 89.5%
- Operating ambient temperature from -40°C to +82°C

### Applications

- Industrial
- Energy
- Medical
- Telecom

## FLEX POWER MODULES PKJ7200/7300 SERIES



[VIEW PRODUCT DETAILS](#)

Flex Power Modules has introduced the PKJ7200 and PKJ7300 series of power modules for railway rolling stock equipment. The modules are designed for the demands of the EN 50155 standard for railway applications and feature a wide input voltage range, surge protection, power interruption and backup, wide operational temperature range, and resistance to shock and vibration. The modules achieve high efficiency of up to 92% at full load, which reduces power dissipation. They are provided in a compact half-brick package, delivering high power density and thus saving space. To handle the multiple different voltages used on trains, they have a wide input range of 60VDC to 160VDC. This means they are capable of handling harsh input voltage conditions, making it easier to cope reliably with the brownouts and transients that can occur in railway rolling stock. To protect against damage for both the modules and the devices they power, the modules provide input Under-Voltage Protection (UVP) and output Over-Current Protection (OCP), Over-Voltage Protection (OVP) and Over-Temperature Protection (OTP). The PKJ7200 series offers 200W of output power, while the PKJ series delivers 300W. Both series provide output voltages of 12V, 13.8V, 15V, 24V, 48V and 54V.

### Features

- Industry standard case dimensions  
61mm x 57.9mm x 12.7mm  
(2.40" x 2.28" x 0.5")
- High efficiency up to 91%
- 4000VDC input to output isolation
- Meets safety requirements according to IEC/EN/UL 62368-1
- Meet requirements of standard EN50155

## FLEX POWER MODULES PNA



[VIEW PRODUCT DETAILS](#) 

The PNA series is an analog non-isolated Point-of-Load (PoL) regulator that offers excellent efficiency and thermal performance in a small form factor. Its compact size and wide input voltage range of 9V to 36V mean that it is ideal for a range of industrial applications, including robotics, factory automation and process control, and that it is suitable for both 12V and 24V power systems.

The regulator has high efficiency of 95.5% at 12Vin and 5.5Vout, at full load. This reduces power losses and heat dissipation. It delivers an adjustable output of 0.9V to 5.5V, at up to 6A output current, which translates to a maximum power output of 33W.

The PNA series provides excellent thermal performance, and can operate at full load in ambient temperatures above +100°C. It has an operating temperature range of -40°C to +125°C.

To save board space, the PNA series is provided in a small form factor, measuring 13mm x 12.35mm x 6.2mm (0.512" x 0.486" x 0.244"). The device also supports bottom-side PCB mounting, thus further reducing board space requirements.

### Features

- Small size 13mm x 12.35mm x 6.2mm (0.512" x 0.486" x 0.244")
- 0.9V to 5.5V output voltage range
- 6A maximum output current
- High efficiency, typ. 93.8% at 24Vin, 5.5Vout, 6A load
- Control loop with fast load transient response
- Allows synchronisation to an external clock
- Meets safety requirements according to IEC/EN/UL62368-1
- MTBF 71.84Mh

## MEAN WELL NPF/PWM/OWA-200 SERIES



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

The 200W products with Class II plastic housing design can be used for different fields and applications. PWM-200 applies to LED lighting products, and it meets the requirements of the IEEE-1789 standard without the visual flicker problems. NPF-200 series adopt C.C+C.V mode, which can be used with any LED strip or constant current luminaires. The linear curve dimming design of NPF-200V series can avoid flicker problem and is suitable for agricultural lighting. Apart from the mentioned features and functions, the PWM-200 and NPF-200 series comply with EN61347/GB19510 and UL8750 certification.

The OWA-200 series focuses on industrial and household applications. Featuring Class II design, it is suitable for electric charging-related apparatus or outdoor intelligent control systems. It meets UL62368 information technology equipment (energy star Level VI) and EN61558/EN60335 industrial and household appliances certifications. OWA-200 series provides different output connectors and waterproof connectors (M15/M19) for information equipment or household application with the adapter for industrial or outdoor damp environments.

### Features

- Constant voltage output (PWM/OWA series)
- Constant current + constant voltage mod (NPF series)
- Meet energy star Level VI and CoC tier 2 regulation (OWA series)
- Active PFC function and efficiency up to 94%
- Meet SELV and Class II design without FG
- Flicker free and IP67 design
- Dimming functions: DALI-2 and 3 in 1 dim. (PWM/NPF series)
- Protections: short circuit/over voltage/over temperature/over load
- Dimensions (LxWxH): 195mm x 68mm x 39.5mm

### Applications

- LED lighting
- Agricultural lighting
- ICT or charging applications

## MEAN WELL NTS-300/450 SERIES DC-AC PURE SINE WAVE INVERTERS



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

The NTS-300/450 replaces the old generation of TS-200/400 series and brings about improvements such as smaller case size, easier operation of panel functions, optimised performance, and more competitive pricing.

The MEAN WELL NTS-300/450 differentiates itself apart from general consumer grade inverter by adopting industrial-grade high reliability, high safety, high quality, and incorporates environmental protection and high-efficiency conceptual design. It also introduces digital smart chips and strictly select construction materials. The main features are small size, light weight, easy to carry, 93% high efficiency, instant 200% peak power capability, flexible output and operation mode adjustment, remote ON/OFF control, multiple intelligent protection (abnormal automatic shutdown), operation at -25°C to +70°C, standard Europe/America/China and universal plugs, short delivery time and international certification. The NTS-300/450 is suitable for use in home/office, car, yacht, remote areas without AC power grid or mobile AC power supply, and can be used to power TV, computer, mobile phone charging, audio, lighting, electric fan and mobile medical cart.

### Features

- Compact size and light weight
- True sine wave output (THD <3%)
- High surge power up to 600W
- Fanless design
- AC output voltage and frequency selectable by DIP S.W
- No load dissipation <1.5W max. at standby saving mode
- -25°C to +65°C wide operating temperature
- Power ON/OFF remote control

### Applications

- Home and office appliance
- Mobile device
- Power tools
- Portable equipment
- Vehicle
- Yacht
- Off-grid solar power system
- Wireless network

## MEAN WELL NTS-750 SERIES DC-AC PURE SINE WAVE INVERTERS



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

The NTS-750 replaces the old generation of TS-700 series and brings about improvements such as smaller case size, easier operation of panel functions, optimised performance, and more competitive pricing.

The MEAN WELL NTS-750 differentiates itself apart from general consumer grade inverter by adopting industrial-grade high reliability, high safety, high quality, and incorporates environmental protection and high-efficiency conceptual design. It also introduces digital smart chips and strictly select construction materials. The main features are small size, light weight, easy to carry, 93% high efficiency, instant 200% peak power capability, flexible output and operation mode adjustment, remote ON/OFF control, multiple intelligent protection (abnormal automatic shutdown), operation at -25°C to +70°C, standard Europe/America/China and universal plugs, short delivery time and international certification. The NTS-750 is suitable for use in home/office, car, yacht, remote areas without AC power grid or mobile AC power supply, and can be used to power TV, computer, mobile phone charging, audio, lighting, electric fan and mobile medical cart.

### Features

- Compact size and light weight
- True sine wave output (THD <3%)
- High surge power up to 1500W
- Temperature controlled cooling fan
- AC output voltage and frequency selectable by DIP S.W
- No load dissipation <1.5W at standby saving mode
- -25°C to +70°C wide operating temperature

### Applications

- Home and office appliance
- Power tools
- Portable equipment
- Vehicle
- Yacht
- Wireless network
- Off-grid solar power system
- Telecom or datacom system

## MEAN WELL HRP-150N/300N/600N 200% HIGH PEAK-POWER POWER SUPPLIES



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

MEAN WELL HRP series have been selling well in the industrial control field for many years because of ultra-high performance and a 5-year long warranty. This year, MEAN WELL specially selected the common power and voltage used for driving motors and developed the HRP-150N/300N/600N series. Output voltages include 12V/24V/36V/48V. Combined with 200% high peak power, they can meet the instant peak power demand of electromechanical equipment.

In the past, in order to overcome the large current draw when driving the motor, users would often buy a power supply with twice the power for use in such motor applications, but it would cause problems such as high purchase cost, larger size, and heavier weight. For example, electromechanical applications such as motors, pumps, actuators, coffee machines and banknote counters. All have peak power requirements for the power supply for a short period. During this period, the power draw will be much higher than the average power. MEAN WELL's HRP-150N/300N/600N series can provide 200% peak power for 5 seconds, which perfectly overcomes this problem. For steady-state average power of 150W/300W/600W, the HRP-150N/300N/600N can support peak power draw as high as 300W/600W/1200W, so that the electromechanical load can start-up reliably. No longer any need to spend extra to buy oversized power supplies.

### Features

- Full range 85VAC to 264VAC input
- High efficiency up to 89%
- 200% peak power for 5 seconds
- Operating temperature range: -40°C to +70°C
- Protections: short circuit/overload/over voltage/over temperature
- UL/TUV/EAC/CB/CE safety approved, meeting EN62368 standard
- 5 years warranty

### Applications

- Industrial power
- LED driver
- Medical power
- KNX power
- Sign panel power
- Configurable power
- DC-AC inverter
- DIN Rail power

## MURATA IRH SERIES



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

Murata's latest encapsulated DC-DC converters, is designed specifically for use in industrial and railway applications. The 150 watt IRH series from Murata Power Solutions provides market-leading power conversion efficiency, in an industry-standard half-brick pinout, using the latest component and packaging technologies in a fixed-frequency switching power supply architecture.

### Features

- Encapsulated circuit design makes them shock- and vibration-tolerant and improves EMI and thermal performance
- Meets the requirements of the EN50155 standard for railway applications for a nominal Vin of 96VDC and 110VDC
- Topology supports a pre-biased output at start-up, eliminating the reverse currents during system start and shutdown that can damage critical circuitry 3:1 Vin range of 57.6VDC to 160VDC
- Delivers 5Vout, 12Vout or 24Vout with 3,000Vrms input to output isolation
- Designed and tested to meet the requirements of EN50155
- Available with standard and flanged baseplate options, and with DOSA or alternate industry standard pinout options
- Standard features include ON/OFF logic control and protection against short circuits, overvoltage and over-temperature
- Efficiency ratings of 91% at 5Vout, 89.5% at 12Vout and 89% at 24Vout

### Applications

- Railway
- Industrial
- Transportation
- Power grid

## MURATA IRQ SERIES



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

Murata has introduced the first in a series of encapsulated DC-DC converters designed specifically for industrial and railway applications from Murata Power Solutions. The IRQ series delivers the latest technology in fixed frequency power conversion available in the industry. The advanced electrical and mechanical design of the IRQ series modules provides high reliability power conversion in the most demanding rail and industrial applications. The industry-standard quarter brick offers packaging and pin configuration options that allow the system designer to choose the most effective solution for cooling and power delivery. Additional features include ON/OFF control options, reinforced insulation, 3KVDC isolation, and options for mounting a heat sink or cold wall application.

The IRQ series delivers fully regulated DC outputs of 5VDC, 12VDC or 24VDC at 100 watts. The converters' 3:1 wide input range of 57.6VDC to 160VDC meets the requirements of EN50155 for nominal  $V_{in}$  voltages of 96VDC and 110VDC including brownout and transient conditions. Each module is designed to deliver full power with efficiencies reaching 87% at 12Vout.

With their encapsulated design, Murata's IRQ converters are shock and vibration tolerant, and offer improved EMI and excellent thermal performance. Standard and flanged baseplate options offer improved thermal management for many applications.

The IRQ series power modules are ideally suited for applications in railway systems and industrial applications that require power conversion from either 96VDC or 110VDC bus voltages.

### Features

- DC input range: 57.6V to 160V (covers both 96V and 110V input range)
- Encapsulated circuitry for optimal thermal/vibration performance
- Regulation:  $\pm 0.3\%$  from no load to full load
- High efficiency
- Maximum baseplate operating temperature: +100°C, full load
- Over-current and over-temperature protection
- Diode rectifier topolog
- Stable no-load operation
- Support pre-bias startup

### Applications

- Industrial
- Railways



## MOLEX THIN-FILM BATTERIES (216196 SERIES)



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

Molex's thin-film battery is a low-profile, flexible, disposable battery with a small footprint designed for low-power single-use applications.

### Features

- No heavy metals
  - > Offers an economical, environmentally safe alternative to lithium
- Thin, flexible form factor
  - > Supports design flexibility appropriate for a wide variety of products
- Flexible and low-profile
  - > Can be applied on a curved surface with a bend radius of 35mm or greater
- Reduced distance between anode and cathode
- Vertically stacked construction provides the following compared to single-layered construction:
  - > Reduced internal resistance
  - > Increased peak current
  - > Increased usable capacity
  - > Reduced footprint
- Available in 1.5V and 3V configurations
  - > Delivers power suitable for low-power disposable application

### Applications

- Consumer
  - > Wearable electronics
  - > Biometric monitoring devices
  - > Sports monitoring devices
- Medical
  - > Patient monitoring devices
  - > Biosensors
  - > Diagnostic and therapeutic devices
  - > Blood-glucose monitoring
  - > Respiratory monitoring
  - > Drug delivery
- Industrial and IoT
  - > Smart labels and tags
  - > Perishable goods monitoring
  - > Environmental sensors



## MOLEX LORA EXTERNAL ANTENNAS (216196 SERIES)



[VIEW PRODUCT DETAILS](#)

Molex LoRa external antennas are flexible whip antennas operating on LoRa frequency bands and offering high performance and 360° coverage.

### Features

- High-band antenna with 2.5dBi peak gain and 75% efficiency
  - > Provides strong and stable wireless connection
- SMA (male) connector
- RP-SMA (male) connector
- Hinge joint allows 90° rotation on the vertical plane and SMA-J connector allows 180° rotation on the horizontal plane
  - > Provides excellent omnidirectional coverage
- Operates on 868MHz and 915MHz
  - > LoRa frequencies offer long-range coverage

### Applications

- Industrial
  - > Smart city
  - > Smart meters
  - > Power devices
  - > Smart logistics
- IoT
  - > IoT in agriculture
  - > IoT and IT infrastructure

## MOLEX ON-METAL WI-FI ANTENNA (21586 SERIES)



[VIEW PRODUCT DETAILS](#)

[BUY NOW](#)

The Molex off-the-shelf 2.4GHz, 5GHz Wi-Fi/Bluetooth external antennas are available in various configurations, offer high RF performance and reliability for wireless and networking applications.

### Features

- Single- and dual-band connectors in straight and folded modes with I-PEX, SMA-J, RP-SMA-J and N-type mounting options
  - > Offers design flexibility
- I-PEX type connector
  - > Secures to the application's device radio and provides space savings
- Multi-protocol solution that supports Wi-Fi, 2.4GHz, 5.8 GHz and Bluetooth technologies
  - > Makes it suitable for diverse applications
- Hinge joint allows 90° rotation on the vertical plane and SMA-J connector allows 180° rotation on the horizontal plane
  - > Provides excellent directional coverage
- IP65-rated design
  - > Provides protection against dust and water ingress
- 3M adhesive for "peel and stick" mounting
  - > Enables easy mounting. Provides strong adhesion with shock absorption, and temperature and water resistance

### Applications

- Connected home
  - > Security and surveillance
  - > Home automation
  - > Home streaming
  - > Entertainment
  - > Smart appliances
  - > Energy and utilities
- IoT
  - > Wireless solutions
  - > Smart factory/industry/city
  - > IoT and IT infrastructure
- Telecommunications/networking
  - > Infrastructure/networking
- Commercial vehicles
  - > Networking

## MOLEX WI-FI/BLUETOOTH TRI-BAND EXTERNAL ANTENNAS (215872 SERIES)



[VIEW PRODUCT DETAILS](#) 

The Molex off-the-shelf 2.4GHz, 5GHz Wi-Fi/Bluetooth external antennas are available in various configurations, offer high RF performance and reliability for wireless and networking applications.

### Features

- Single- and dual-band connectors in straight and folded modes with I-PEX, SMA-J, RP-SMA-J and N-type mounting options
  - > Offers design flexibility
- I-PEX type connector
  - > Secures to the application's device radio and provides space savings
- Multi-protocol solution that supports Wi-Fi, 2.4GHz, 5.8GHz and Bluetooth technologies
  - > Makes it suitable for diverse applications
- Hinge joint allows 90° rotation on the vertical plane and SMA-J connector allows 180° rotation on the horizontal plane
  - > Provides excellent directional coverage
- IP65-rated design
  - > Provides protection against dust and water ingress
- 3M adhesive for "peel and stick" mounting
  - > Enables easy mounting. Provides strong adhesion with shock absorption, and temperature and water resistance
- Two SMA straight cable plugs (male)
  - > Provides reliable and durable connection for external applications

### Applications

- Connected home
  - > Security and surveillance
  - > Home automation
  - > Home streaming
  - > Entertainment
  - > Smart appliances
  - > Energy and utilities
- IoT
  - > Wireless solutions
  - > Smart factory/industry/city
  - > IoT and IT infrastructure
- Telecommunications/networking
  - > Infrastructure/networking
- Commercial vehicles
  - > Networking



## AMPHENOL ADVANCED SENSORS NPC-1210 SERIES LOW/MEDIUM PRESSURE SENSORS



[VIEW PRODUCT DETAILS](#) 

The NovaSensor NPC-1210 series of low/medium pressure sensors provides a cost effective solution for applications that require calibrated performance over a wide temperature range. Packaged in a dual-in-line configuration, the NPC-1210 series is intended for printed circuit board mounting. Optional pressure port and lead configurations provide superior flexibility in low profile applications where pressure connection orientation is critical.

The NPC-1210 series is based on NovaSensor's advanced SenStable® piezoresistive sensing technology. Silicon micromachining techniques are used to ion implant piezoresistive strain gages into a Wheatstone bridge configuration. The NPC-1210 series offers the added advantage of superior temperature performance over the temperature compensated range of 0°C to +60°C (32°F to 140°F). A gain set resistor is included to normalise the FSO for field interchangeability.

### Features

- High sensitivity
- High accuracy
- Interchangeable
- Temperature compensated 0°C to +60°C (32°F to 140°F)
- CB mountable package
- DIP package
- Solid-state reliability
- Individual device traceability

### Applications

- Industrial automation
- Air flow monitors
- Process control
- Medical equipment
- Underground cable leak detection
- Ventilation
- Respirator monitoring

## AMPHENOL ADVANCED SENSORS PIHER SENSING SYSTEMS' MSC-360 HALL-EFFECT ROTARY POSITION SENSORS



[VIEW PRODUCT DETAILS](#) 

This sensor complements Piher's broad range of magnetic sensors providing a perfect fit for preferential use in space constraint applications.

Despite its lightweight and miniature size of only 21mm, this hall-IC angle sensor delivers high performance with up to 360° electrical angle (without dead zone), 12bit resolution, extended life and EMI and ESD protection.

The MSC-360 can easily be tailored to customers' needs providing value at the lowest cost even for the most demanding environments.

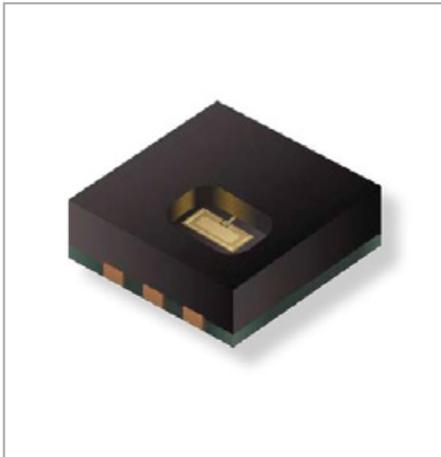
### Features

- Non-contacting long life angle/position absolute sensor
- Embedded OEM motion control applications
- Pedal position sensor
- Throttle/EGR valve and gear position sensor
- Height and suspension sensor
- Medical devices and exoskeletons
- Industrial automation displacement sensor
- Joysticks and hand controls
- Automatic Guided Vehicles (AGVs) steering sensor
- Forklifts
- Robotics, material handling, industrial equipment, HVAC monitoring and control

### Applications

- Energy and smart infrastructure
- Industrial appliances and tools
- Home, office and catering appliances
- Construction
- Automotive
- Forestry and horticultural
- Mechatronics and robotics
- MedTech
- Production machines and automation systems
- Transportation and mobility
- Optical systems and microtechnologies

## BOURNS BPS240 SERIES MEMS HUMIDITY SENSORS



[VIEW PRODUCT DETAILS](#) 

[BUY NOW](#) 

Bourns Sensors and Controls product line has introduced a model in the line of environmental sensors based on Microelectromechanical Systems (MEMS) technology. The series is designed for the advanced sensor needs in industrial automation, energy, building and home control, and low/medium-risk medical applications. The model BPS240 series has been designed to provide fast response time with digital (I<sup>2</sup>C) output, high sensitivity/accuracy, and long-term reliability.

### Features

- Fast response time (<1 second)
- Relative humidity accuracy of ±2% (typical)
- Low voltage operation
- Low current consumption
- I<sup>2</sup>C communication protocol
- Reliable capacitive technology
- RoHS compliant

### Applications

- Industrial
  - > HVAC systems
  - > Process monitoring
  - > Climate monitoring, interior and exterior
- Medical devices (low/medium risk)
  - > Diagnostic equipment
  - > Analysis equipment

## BOURNS DMS22B NON-CONTACTING FEEDBACK ROTARY SENSOR



[VIEW PRODUCT DETAILS](#) 

In line with Bourns' commitment to provide products with innovative design, superior quality and exceptional value, Bourns Sensors and Controls has introduced the model DMS22B non-contacting feedback rotary sensor with SSI output.

The model DMS22B is designed to meet the specifications of heavy-duty applications requiring long cycle life and high reliability. This single-turn rotary sensor features hall effect technology coupled with SSI output and factory programmable electrical angle for consistent and dependable operation up to 50 million shaft revolutions. Available with a 7/8-inch flatted shaft and bushing mount configuration, Bourns® model DMS22B sensor is a highly versatile position sensing device.

### Features

- Non-contacting magnetic technology
- Highly resistant to vibration/shock
- Highly resistant to fluid/dust ingress
- Programmable at factory for zero position
- Robust design for industrial applications
- Highly repeatable
- RoHS compliant

### Applications

- Patient platform position feedback
- Pneumatic control valve position feedback
- Draw wire position sensors
- Remote communications antenna positioning
- Actuator motor position feedback
- Automated manufacturing robotics
- Tilt control and tilt positioning feedback

## C&K MPSR MAGNETIC PROXIMITY SENSOR



[VIEW PRODUCT DETAILS](#)

The MPSR series are ruggedised magnetic proximity sensors, perfect for automotive sensors and indicators, industrial sensors, anti-tampering and other security, and factory automation equipment. The MPSR series sensor and magnet are both sealed in a tough aluminum housing combined with stainless steel wire sleeves, protecting them from the harsh environments they're commonly used in, whether it be from oil, water, grease, or volatile chemicals and gases. Manufactured for a quick and easy installation, the MPSR series also have a long lifecycle; lasting for more than 4 million actions and a robust 30V 3W rating.

### Features

- Long life: 4M+ operations, offering great lifetime value
- Hermetically sealed contacts ensure inherent insulation of electrical switch contacts from outside environment (no spark risk)
- Quick and easy installation: faster, simpler, cheaper installation costs
- Ruggedised housing provides environmental protection from grease, oil, water and other contaminants
- Form C (SPDT) contacts with 3W 30V rating, capable for both signal level and load switching
- Zero leakage current which saves energy for battery-powered devices

### Applications

- Automotive sensors
- Off-road equipment
- Industrial automation
- Factory automation equipment
- Remote monitoring
- Anti-tamper detection
- IoT

## MURATA SCHA63T



[VIEW PRODUCT DETAILS](#)

Murata has developed a MEMS (Micro-Electro-Mechanical Systems) 6DoF (Six Degrees of Freedom) inertial sensor for autonomous off-highway vehicles, dynamic inclination sensing and GNSS positioning support. The sensor enables further advancement in technology and novel solutions for advanced driver/operator assistance systems, autonomous vehicles and GNSS based measurement instruments. The product delivers highest performance available on component level in key parameters like bias stability and noise. Murata calibrates orthogonality of all measurement axes. This allows customers and system integrators to skip this costly and performance-critical process step.

Murata's SCHA63T sensor is the world's first single package 6DoF component with this level of performance. Traditionally this level of inertial sensor performance has only been available on expensive high-end IMU modules. The sensor can enable centimetre-level accuracy in machine dynamics and position sensing, and can assist ensuring safe, robust and verified designs. One of the key focus areas in product development for SCHA63T has been to ensure operation during high mechanical shock and vibration. Within the same product family, there are also sensor variants qualified according to automotive AEC-Q100 standard. SHCA63T sensor includes several advanced self-diagnostic features and can achieve full compliance with ASIL-D (Automotive Safety Integrity Level).

### Features

- Cross-axis calibration enables better than 0.14° orthogonality error
- Excellent vibration robustness
- Extensive self-diagnostics
- Can be used in safety critical applications

### Applications

- Inertial Measurement Units (IMUs)
- Navigation and positioning
  - > GPS assistance and terrain/pose compensation
  - > Surveying equipment and instruments
- Machine control and guidance
  - > Precision guidance for agricultural machines
  - > Construction machine autonomy and driver assistance
- Dynamic inclination
  - > Motion analysis and control
  - > Platform and camera stabilisation
- Robotic control and UAVs

## OMRON B5W-DB SERIES DIFFUSE REFLECTIVE SENSOR



[VIEW PRODUCT DETAILS](#) 

The OMRON B5W-DB series is a super miniature long-distance diffuse reflective sensor that can be installed anywhere. It is designed to be immune to ambient light, and has screws that can be mounted from 4 directions for positioning flexibility.

### Features

- Small size and sensing distance of 550mm
- Possible to mount from 4 directions
- Enhanced disturbance light resistance
- Small size to mount in the place where you want and long sensing distance model
- Easy to mount
- Less susceptible to sunlight

### Applications

- Hands detection in sanitary equipment
- Human body detection in sterilisation equipment
- Human body detection in temperature measurement equipment

## PANASONIC ELECTRIC WORKS FLAT SQUARE TYPE PAPIRS



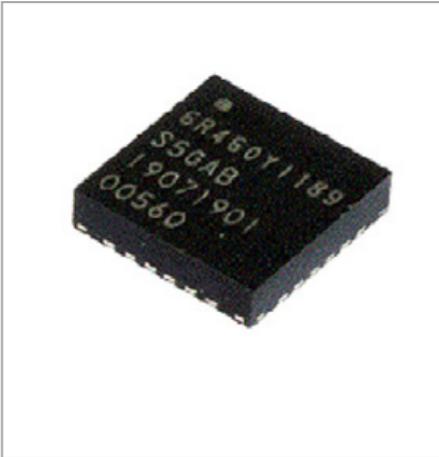
[VIEW PRODUCT DETAILS](#) 

The "Flat Square Type" can be integrated almost invisibly into any product, thanks to its inconspicuous flat and square lens which hides the typical motion detector look. This sensor is suitable for ceiling-, wall- or corner- mounting and can therefore be used in countless product designs. This passive infrared motion sensor extends the PaPIRS families EKMC (170 $\mu$ A) for battery-free and EKMB (1 $\mu$ A, 2 $\mu$ A and 6 $\mu$ A) for battery-operated devices.

### Features

- Typical detection distance: 5m
- Max. detection zone area (rectangular): 9.3m x 9.3m @3m
- Dimensions top lens: 9.6mm x 9.6mm
- Sensor height: 10.9mm
- Digital output (open drain) with 1 $\mu$ A, 2 $\mu$ A, 6 $\mu$ A and 170 $\mu$ A
- Analog output (op-amp) with 170 $\mu$ A
- Analog type includes integrated amplifier circuitry
- Lens colours: white, pearl white, and black

## PANASONIC INDUSTRY EWTS5G SERIES 6-IN-1 INERTIAL SENSOR



[VIEW PRODUCT DETAILS](#) 

Panasonic has added the 6-in-1 inertial sensor to its' already broad range of specialty sensor solutions.

Panasonic's 6-in-1 sensor 6DoF (Degrees of Freedom) inertial sensor meets the ISO26262 function safety standard for automotive applications. The 6-in-1 inertial sensor features a unique sensing element consisting of 3 accelerometers and 3 gyroscopes on one single MEMS chip providing high sensing accuracy and much more system design flexibility. MEMS, ASIC and Cap are directly bonded in the wafer level and packaged. This enables the 6-in-1 inertial sensor to be compact, highly accurate, easy-to-install and highly reliable.

The 6-in-1 inertial sensor with 6DoF is available in one very small footprint package size of 4.5mm x 4.5mm x 1.1mm enabling compact and simple ECU system design.

### Features

- 6DoF (Degrees of Freedom) in one package size 4.5mm x 4.5mm x1.1mm
- 3 accelerometers and 3 gyro sensors on one single MEMS chip
- All 6 sensor elements are in a single chip and maintain sensing axis to axis with very tight accuracy
- Single MEMS and ASIC chips design and are directly bonded at wafer level
- ISO26262 functional safety compliance for automotive safety systems and self diagnostics
- ASIL-B, compatible with ASIL-D functional safety system development automotive grade for safety applications including rollover detection and Electric Stability Control (ESC) systems

### Applications

- Airbag rollover detection, ESC
- Leveling, calibration, compensation
- Vehicle position, vibration sensing, active suspension
- Direction, leveling, vibration compensation
- Motion and position sensing
- Off road vehicles
- Construction vehicles
- Industrial use

## TDK INVENSENSE IAM-20685 6-AXIS MEMS GYROSCOPE AND ACCELEROMETER



[VIEW PRODUCT DETAILS](#) 

Taking advantage of TDK's proprietary MEMS fabrication platform and technology, the IAM-20685 features a highly integrated single-chip 6-axis MEMS gyroscope and accelerometer combination in a small plastic package. Offering unparalleled low-power consumption, compared to competitive sensor solutions within the same product category, the IAM-20685 enables system-orientation-free mounting and unprecedented design flexibility for autonomous systems applications.

The IAM-20685 delivers six degrees of freedom, sustaining dynamic, highly accurate data under all conditions directly to the ADAS within the vehicle, to automate and enhance the driver experience when driving or parking. It reports high resolution, stable and reliable 16-bits acceleration and angular velocity along the three orthogonal axes. This enables parking-assistance systems to efficiently determine the vehicle's motion and vision systems to enable stabilisation techniques and improve image quality, and for positioning systems to enhance absolute position accuracy. Due to six separate masses integrated in its monolithic structure, IAM-20685 offers small cross-axis sensitivity and allows for accurate reporting of linear acceleration and angular velocity into the vehicle's reference frame, regardless of the installation mounting orientation, to improve design flexibility and ADAS performance.

### Features

- ASIL-B rated
- Automotive-qualified based on AEC-Q100 Grade 2
- User-selectable full-scale for both gyroscope and accelerometer
- Two embedded temperature sensors
- 16-bit output for accelerometer, gyroscope, and temperature sensors
- SPI serial interface with CRC
- -40°C to +105°C operating temperature range

### Applications

- ADAS
- Autonomous driving systems
- Automated parking
- Vision systems
- Navigation system aids for dead reckoning
- Telematics
- Accurate positioning for vehicle-to-vehicle and infrastructure

## TDK INVENSENSE ICM-42688-V HIGH PRECISION 6-AXIS MEMS MOTIONTRACKING™



[VIEW PRODUCT DETAILS](#) 

The ICM-42688-V is a high performance 6-axis MEMS motion tracking device that combines a 3-axis gyroscope and a 3-axis accelerometer. This device is targeted at applications that require premium levels of sensor fusion accuracy for precise orientation detection. This device comes bundled with TDK's Advanced Sensor Fusion library that provides highly accurate 6-axis and 9-axis sensor fusion outputs. The ICM-42688-V and the Advanced Sensor Fusion library together provide an accurate out-of-box motion tracking solution for applications such as virtual reality, augmented reality, wearables, gaming, smartphones, tablets, and robotics.

ICM-42688-V it has a configurable host interface that supports I<sup>3</sup>CSM, I<sup>2</sup>C and SPI serial communication, features a 2KB FIFO and 2 programmable interrupts with ultra-low-power wake-on-motion support to minimise system power consumption. It supports highly accurate external clock input, that helps to reduce system level sensitivity error, improve orientation measurement from gyroscope data, reduce ODR sensitivity to temperature and device to device variation. The device includes industry first 20-bits data format support in FIFO for high-data resolution. This FIFO format encapsulates 19-bits of gyroscope data and 18-bits of accelerometer data.

### Features

- Gyroscope noise: 2.8mdps/√Hz and accelerometer noise: 70μg/√Hz
  - > Low-noise mode 6-axis current consumption of 0.88mA
- User selectable gyro full-scale range (dps): ±15.6/±31.2/±62.5/±125/±250/±500/±1000/±2000
- User selectable accelerometer full-scale range (g): ±2/±4/±8/±16
- User-programmable digital filters for gyro, accel, and temp sensor
- APEX motion functions:
  - > Pedometer, tilt detection, tap detection

- > Wake on motion, raise to wake/sleep, significant motion detection
- Host interface: 12.5MHz I<sup>3</sup>CSM, 1MHz I<sup>2</sup>C, 24MHz SPI

### Applications

- AR/VR controllers
- Head mounted displays
- Wearables
- Sports
- Robotics
- IoT applications

## TDK INVENSENSE ICM-40627 HIGH PERFORMANCE 6-AXIS MOTIONTRACKING™ IMU



[VIEW PRODUCT DETAILS](#) 

The ICM-40627 is a 6-axis MEMS motion tracking device that combines a 3-axis gyroscope and a 3-axis accelerometer. This device is targeted at hand-held devices that require precise mouse pointing and motion control. The ICM-40627 comes bundled with TDK's Air Motion library that enables precise mouse pointing, cursor control, swipe, roll and other motion gestures. The ICM-40627 and the Air Motion library together provide a complete out-of-the-box solution for hand-held devices such as smart TV remotes, air mouse, presentation pointers and smart pencils.

ICM-40627 has a configurable host interface that supports I<sup>2</sup>C and SPI serial communication, features a 2KB FIFO and 2 programmable interrupts with ultra-low-power wake-on-motion support to minimise system power consumption. The ICM-40627 supports low gyro and accel sensor noise in this IMU Class and has high stability against temperature. Other industry-leading features include InvenSense on-chip APEX motion processing engine for gesture recognition, activity Classification, and pedometer, along with programmable digital filters, and an embedded temperature sensor. The device supports a VDD operating range of 1.71V to 3.6V, and a separate digital IO supply, VDDIO from 1.71V to 3.6V.

### Features

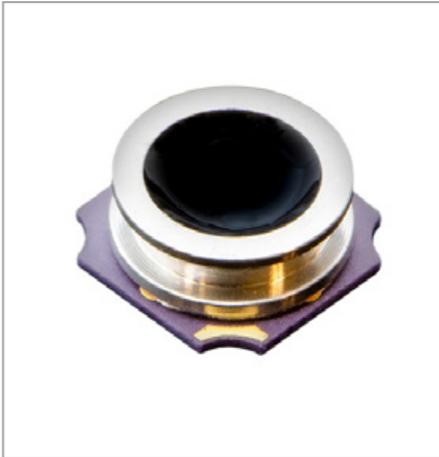
- Gyroscope noise: 7mdps/√Hz and accelerometer noise: 110μg/√Hz
  - > Low-noise mode 6-axis current consumption of 0.65mA
- User selectable gyro full-scale range (dps): ±15.6/±31.2/±62.5/±125/±250/±500/±1000/±2000
- User selectable accelerometer full-scale range (g): ±2/±4/±8/±16
- User-programmable digital filters for gyro, accel, and temp sensor

- APEX motion functions:
  - > Pedometer, tilt detection, tap detection
  - > Wake on motion, raise to wake/sleep, significant motion detection
- Host interface: 1MHz I<sup>2</sup>C, 24MHz SPI

### Applications

- Pointing mouse
- Remote control

## TDK INVENSENSE ICP-10125 10ATM PRESSURE AND TEMPERATURE SENSOR IC



[VIEW PRODUCT DETAILS](#) 

The ICP-10125 pressure sensor is based on MEMS capacitive technology which provides ultra-low noise at the lowest power, enabling industry leading relative accuracy, sensor throughput, and temperature stability. The pressure sensor can measure pressure differences with an accuracy of  $\pm 1\text{Pa}$ , an accuracy enabling altitude measurement differentials as small as 8.5cm, less than the height of a single stair step.

Consuming only  $1.3\mu\text{A}$  @1Hz, the device is available in a small footprint  $3.55\text{mm} \times 3.55\text{mm} \times 1.45\text{mm}$  chimney package with waterproofing gel providing IPx8 waterproofing to 10ATM. The ICP-10125 is ideally suited for wearable fitness monitoring and battery powered IoT.

The ICP-10125 offers an industry leading temperature coefficient offset of  $\pm 0.5\text{Pa}/^\circ\text{C}$ . The combination of high accuracy, low power, temperature stability, waterproofing in a small footprint enables higher performance barometric pressure sensing for sports activity identification and mobile indoor/outdoor navigation.

### Features

- Pressure operating range: 30kPa to 110kPa
- Noise and current consumption
  - > 0.4Pa @  $10.4\mu\text{A}$  (ULN mode)
  - > 0.8Pa @  $5.2\mu\text{A}$  (LN mode)
  - > 3.2Pa @  $1.3\mu\text{A}$  (LP mode)
- Pressure sensor relative accuracy:  $\pm 1\text{Pa}$  for any 10hPa change over 950hPa-1050hPa at  $+25^\circ\text{C}$
- Pressure sensor absolute accuracy:  $\pm 1\text{hPa}$  over 950hPa-1050hPa,  $0^\circ\text{C}$  to  $+65^\circ\text{C}$
- Pressure sensor temperature coefficient offset:  $\pm 0.5\text{Pa}/^\circ\text{C}$  over  $+25^\circ\text{C}$  to  $+45^\circ\text{C}$  at 100kPa
- Temperature sensor absolute accuracy:  $\pm 0.4^\circ\text{C}$
- IPx8: waterproof to 10ATM

### Applications

- Smart watches
- Leisure, sports, and fitness activity monitoring for wearable sensors
- Altimeters and barometers for portable devices
- Indoor/outdoor navigation (dead-reckoning, floor/elevator/step detection)
- Home and building automation
- Weather forecasting

## TDK INVENSENSE ICP-20100 LOW NOISE, LOW POWER MEMS BAROMETRIC PRESSURE



[VIEW PRODUCT DETAILS](#) 

The ICP-20100 is a barometric pressure sensor based on MEMS capacitive technology, improving our lead in the development of ultra-low noise at the lowest power and progressing our industry-leading relative accuracy, sensor throughput, and temperature stability. The ICP-20100 achieves the industry's lowest pressure noise of 0.4Pa RMS, while attaining the industry's lowest power consumption of  $1\mu\text{A}$ , and retains excellent temperature stability with a temperature coefficient of  $\pm 0.5\text{Pa}/^\circ\text{C}$ .

The ICP-20100 capacitive pressure sensor can operate over wide temperature ranges and a variety of applications, meeting US carrier requirements for 3D geolocation and emergency applications such as the enhanced 911 (E911) system, enabling mobile indoor/outdoor navigation, improved activity identification for leisure, sport and fitness purposes, and altitude-hold in drones. The sensor assists in extending battery life for Always-ON applications due to its extreme low-power consumption.

## TDK IIM-42351 SERIES 3-AXIS SMARTINDUSTRIAL™ ACCELEROMETER MEMS DEVICE



[VIEW PRODUCT DETAILS](#) 

The IIM-42351 is a 3-axis accelerometer packaged in a small 2.5mm x 3mm x 0.91mm (14-pin LGA) package. The IIM-42351 includes multiple capabilities to enable easy, robust and accurate inertial and inclination measurements in industrial applications:

- Low noise: 70µg/√Hz
- Low power: 0.3mA with all 3-axis delivering full performance
- Output data rate up to 8kHz
- Highly accurate external clock input to increase ODR accuracy, reduce system level sensitivity error, improve measurement impacts from device to device variation
- 2K-byte FIFO that can lower the traffic on the serialbus interface, and reduce power consumption by allowing the system processor to burst read sensor data and then go into a low-power mode
- Wake-on-motion interrupt for low power operation of applications processor
- Operating temperature range: -40°C to +105°C

The host interface can be configured to support I<sup>3</sup>CSM slave, I<sup>2</sup>C slave, or SPI slave modes. The I<sup>3</sup>CSM interface supports speeds up to 12.5MHz (data rates up to 12.5Mbps in SDR mode, 25Mbps in DDR mode), the I<sup>2</sup>C interface supports speeds up to 1MHz, and the SPI interface supports speeds up to 24MHz. The device features an operating voltage range from 3.6V down to 1.71V

### Features

- Digital-output X-, Y-, and Z-axis accelerometer with programmable full-scale range of ±2g, ±4g, ±8g and ±16g
- User-programmable interrupts
- I<sup>3</sup>CSM/I<sup>2</sup>C/SPI slave host interface
- Digital-output temperature sensor
- External clock input supports highly accurate clock input from 31kHz to 50kHz
- Small and thin package: 2.5mm x 3mm x 0.91mm (14-pin LGA)

### Applications

- Tilt sensing
- Platform stabilisation
- Robotics

## TDK IIM-42352 SERIES 3-AXIS SMARTINDUSTRIAL™ ACCELEROMETER MEMS DEVICE



[VIEW PRODUCT DETAILS](#) 

The IIM-42352 is a 3-axis accelerometer packaged in a small 2.5mm x 3mm x 0.91mm (14-pin LGA) package. The IIM-42352 includes multiple capabilities to enable easy, robust and accurate inertial and vibration measurements in industrial applications:

- Wide and flat frequency response range: from DC to 4kHz (±3 dB point)
- Low noise: 70µg/√Hz
- Low power: 0.3mA with all 3-axis delivering full performance
- Output data rate up to 32kHz
- Highly accurate external clock input to increase ODR accuracy, reduce system level sensitivity error, and improve measurement impacts from device to device variation
- 2K-byte FIFO that can lower the traffic on the serialbus interface and reduce power consumption by allowing the system processor to burst read sensor data and then go into a low-power mode
- Wake-on-motion interrupt for low power operation of applications processor
- Operating temperature range: -40°C to +105°C

The host interface can be configured to support I<sup>3</sup>CSM slave, I<sup>2</sup>C slave, or SPI slave modes. The I<sup>3</sup>CSM interface supports speeds up to 12.5MHz (data rates up to 12.5Mbps in SDR mode, 25Mbps in DDR mode), the I<sup>2</sup>C interface supports speeds up to 1MHz, and the SPI interface supports speeds up to 24MHz. The device features an operating voltage range from 3.6V down to 1.71V.

### Features

- Digital-output X-, Y-, and Z-axis accelerometer with programmable full-scale range of ±2g, ±4g, ±8g and ±16g
- User-programmable interrupts
- I<sup>3</sup>CSM/I<sup>2</sup>C/SPI slave host interface
- Digital-output temperature sensor
- External clock input supports highly accurate clock input from 31kHz to 50kHz
- Small and thin package: 2.5mm x 3mm x 0.91mm (14-pin LGA)
- 20,000g shock tolerant

### Applications

- Vibration measurement
- Predictive maintenance
- Tilt sensing
- Platform stabilisation
- Robotics

## TDK IIM-42652 SERIES 6-AXIS SMARTINDUSTRIAL™ MOTION TRACKING MEMS



[VIEW PRODUCT DETAILS](#) 

The IIM-42652 is a 6-axis SmartIndustrial™ motion tracking device that supports an extended operating temperature range. The IIM-42652 combines a 3-axis gyroscope, and a 3-axis accelerometer in a small 2.5mm x 3mm x 0.91mm (14-pin LGA) package. It also features a 2K-byte FIFO that can lower the traffic on the serial bus interface and reduce power consumption by allowing the system processor to burst read sensor data and then go into a low-power mode. IIM-42652 supports highly accurate external clock input to reduce system level sensitivity error, improve orientation measurement from gyroscope data and to reduce ODR sensitivity to temperature and device to device variation. The host interface can be configured to support I<sup>3</sup>CSM slave, I<sup>2</sup>C slave, or SPI slave modes. The I<sup>3</sup>CSM interface supports speeds up to 12.5MHz (data rates up to 12.5Mbps in SDR mode, 25Mbps in DDR mode), the I<sup>2</sup>C interface supports speeds up to 1MHz, and the SPI interface supports speeds up to 24MHz. The device features an operating voltage range from 3.6V down to 1.71V.

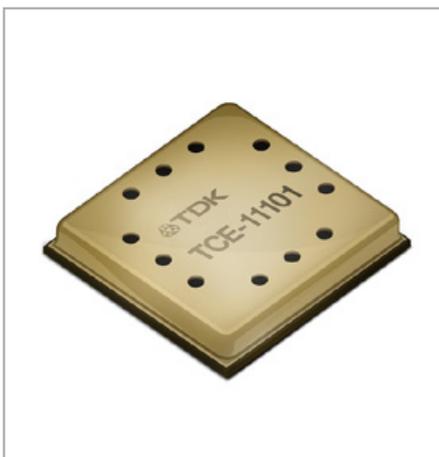
### Features

- Digital-output X-, Y-, and Z-axis angular rate sensors (gyroscopes) with programmable full-scale range of  $\pm 15.625$ ,  $\pm 31.25$ ,  $\pm 62.5$ ,  $\pm 125$ ,  $\pm 250$ ,  $\pm 500$ ,  $\pm 1000$ , and  $\pm 2000$  degrees/sec
- Digital-output X-, Y-, and Z-axis accelerometer with programmable full-scale range of  $\pm 2g$ ,  $\pm 4g$ ,  $\pm 8g$  and  $\pm 16g$
- User-programmable interrupts
- I<sup>3</sup>CSM/I<sup>2</sup>C/SPI slave host interface
- Digital-output temperature sensor
- Small and thin package: 2.5mm x 3mm x 0.91mm (14-pin LGA)
- 20,000 g shock tolerant

### Applications

- Navigation
- Orientation measurement
- Tilt sensing
- Platform stabilisation
- Robotics

## TDK INVENSENSE TCE-11101 ULTRA LOW POWER MEMS CO<sub>2</sub> GAS SENSOR



[VIEW PRODUCT DETAILS](#) 

The TCE-11101 is a miniaturised, ultra-low power MEMS sensor for accurate detection of carbon dioxide (CO<sub>2</sub>). It features integrated electronics that offers digital I<sup>2</sup>C communication, along with an on-board processor to support background processing and user configurability.

The TCE-11101 also features very wide range of sensing capability, from 400ppm to 50,000ppm of CO<sub>2</sub>. The TCE-11101 features state-of-the-art MEMS technology combined with advanced packaging and software support, all of which enable accuracy of detection while allowing a miniaturised form factor of 5mm x 5mm x 1mm, with average power (under normal usage scenarios) of less than 1mW.

Other industry-leading features include an embedded temperature sensor, software support available on the embedded micro-controller as well as on the host, automatic background calibration, and an easy-to-use design kit.

The device supports a VDD operating range of 2.7V to 3.3V.

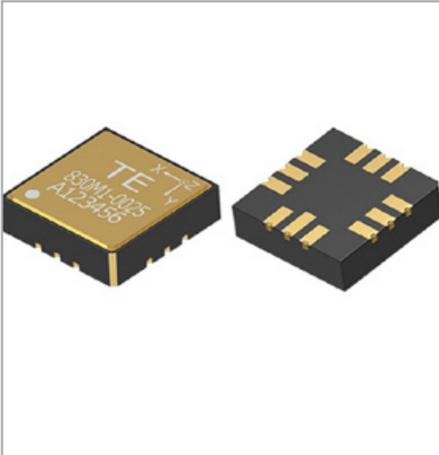
### Features

- Baseline accuracy:  $\pm 75\text{ppm} \pm 3\%$ 
  - > Even better accuracy at CO<sub>2</sub> concentrations under 2000ppm
- Highly stable output
- Industry-leading sensor response time: <30sec.
- Product variant offers very large sensing range: 400ppm to 50,000ppm
- Lifetime: >5 years
- Host interface: 400KHz I<sup>2</sup>C

### Applications

- Indoor Air Quality (IAQ) monitoring
- Outdoor Air Quality Monitoring (AQM)
- Demand Controlled Ventilation (DCV) for homes and buildings
- Automotive in-cabin monitoring
- IoT monitoring devices for home and personal use
- Breath monitoring
- Leakage detection

## TE CONNECTIVITY 830M1 TRIAXIAL ACCELEROMETER



[VIEW PRODUCT DETAILS](#)

Factories are becoming more autonomous and downtime of these automated machines can be costly. Sensors are being used to capture critical performance data for improved efficiency, lower costs, and better equipment utilisation of factory machinery. The triaxial embedded 830M1 accelerometer from TE Connectivity (TE) offers advanced acceleration sensing for machine health monitoring where wide bandwidth, small size, low power, and robust performance are essential. Optimised for critical machine health monitoring the 830M1 offers an outstanding measurement bandwidth (up to 15kHz), superior resolution and is designed with highly stable Piezoelectric (PE) sensing technology, to provide long-term, reliable, stable and accurate performance for condition monitoring applications in harsh environments.

### Features

- Provide superior resolution with early detection and better quality of measurement for improved predictive maintenance
- Ensure long-term stability and minimal long-term drift with highly stable piezoelectric sensing crystals technology
- Enable protection against harsh environments with highly reliable sensor suitable for condition monitoring
- Allow ease of installation with fully hermetic LCC (Leadless Chip Carrier) package
- Include Ni1000 nickel thin film RTD temperature sensor for combination sensing from a single package

### Applications

- Condition monitoring
- Predictive maintenance installations
- Embedded vibration monitoring
- Impact and shock monitoring
- Data loggers
- Bearing and shaft monitoring
- Security monitoring key

## TE CONNECTIVITY SM9000 ULTRA-LOW DIGITAL PRESSURE SENSOR



[VIEW PRODUCT DETAILS](#)

There's an increasing demand for lower pressure-sensing capabilities in industrial and medical markets. From HVAC and gas flow to Continuous Positive Airway Pressure (CPAP), ventilation, and patient monitoring applications, the ability to detect small pressure changes is critical. TE Connectivity's (TE), SM9000 pressure sensor series offers superior performance and long-term stability in a robust, compact package.

The SM9000 series enables ultra-low pressure sensing offering pressure ranges as low as 125Pa with a 16-bit I<sup>2</sup>C digital interface. The sensors are available in gage and differential configuration in JEDEC standard SOIC-16 package with dual vertical or horizontal porting options. With the ability to detect even the smallest pressure changes with high levels of accuracy, these sensors provide long-term stability and a total error band of <1% FS after board mount and system level autozero.

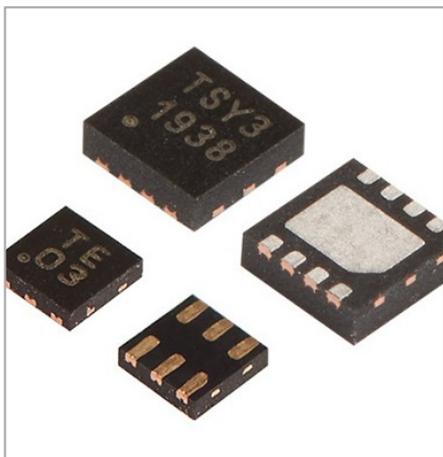
### Features

- Facilitate ultra-low pressure sensing in gage and differential configuration from 125Pa with a 16-bit I<sup>2</sup>C digital interface
- Offer high-accuracy and long-term stability with a Total Error Band (TEB) of <1% FS for accurate measurements
- Enable compact design with JEDEC SOIC-16 package with dual vertical or horizontal porting options
- Utilise piezoresistive sensing element with signal processing to provide a pressure calibrated and temperature compensated output

### Applications

- Air and gas flow applications
- Clothes/dishwasher water level
- CPAP machines
- Filter cleanliness detection
- HVACR
- Patient monitoring devices
- Variable air volume controller
- Ventilators

## TE CONNECTIVITY TSY303 DIGITAL TEMPERATURE SENSORS



[VIEW PRODUCT DETAILS](#) 

The TSY303 is a miniature digital temperature sensor that provides factory calibrated highly accurate temperature data. The device contains a durable temperature sensor element, A/D converter, and microcontroller to manage data communications via an I<sup>2</sup>C interface.

TSY303 is available in a TDFN8 or a XDFN6 package to easily adapt to the space available on a PC board. These packages are very small and have low thermal mass which provides a quick response to temperature changes.

The operating and measurement temperature range is -40°C to +125°C with a resolution of ±0.01°C. Operating and sleep currents are extremely low making this sensor ideal for mobile and battery power applications.

### Features

- High accuracy ±0.5°C @ temp.: 0°C to +60°C
- Adjustment of high accuracy temperature range on request
- Low supply current <5µA (standby <0.4µA)
- I<sup>2</sup>C Interface up to 1MHz
- Small IC-package TDFN8 2.5mm x 2.5mm and XDFN6 1.5mm X 1.5mm
- Operating temperature range: -40°C to +125°C
- Programmable I<sup>2</sup>C address

### Applications

- Industrial control
- Replacement of precision RTDs, thermistors and NTCs
- Heating/cooling systems
- HVAC
- Medical probes and patient monitoring
- Weather stations
- Fitness watches and wearables
- Consumer appliances









	Adapters wall plug and external desktop	Enclosed and open frame/U-Frame	PCB Board mount and chassis mount	Fanless and conduction cooled	DIN rail mount	LED and display driver + system accessories	Modular build power systems	CRPS and datacenter and telecom front-end	High voltage and high power	Ruggedised and liquid cooled	Chargers	Digital and smart power supplies	Switching regulators buck and buck-boost	DC-DC low power miniature isolated	DC-DC industrial standards	DC-DC and IBC brick style 50W - 1800W	DC-DC Brick style non-isolated 100W - 3000W	Gate-drive DC-DC conversion	Off board - chassis mount	Enclosed case panel mount	Open frame + U-frame with case	DIN rail mount	CRPS-datacenter front end-rectifier	Higher input voltage 100VDC to 2000VDC	Medical (certified)	Railway compliant + transportation	LED DC-DC conversion	Micro point of load 0.5A to 25A	Digital point of load 2A -180A	Analog point of load DOSA - POLA	Power block modules	Direct conversion isolated	Automotive point of load buck/buck-boost	
	AC-DC power supply												DC-DC power Conversion										Point of load											
ABB Embedded	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
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# Batteries

	Zinc carbon	Alkaline manganese	Silver oxide	Zinc air	Lithium manganese dioxide	Lithium iron disulfide	Lithium thionyl chloride	Lithium poly-carbon monofluoride	Sealed lead acid	Nickel metal hydride	Lithium ion	Lithium polymer	Lithium vanadium pentoxide	All-ceramic multilayer	Chargers and power adapters	
	Primary								Rechargeable							
Artesyn																.
Dubilier					.	.	.			.	.	.				
Energys								.								
GP Batteries	.	.	.	.	.	.				.	.					
MEAN WELL																.
Molex	.															
Murata		.	.		.						.					
Nichicon											.					
Panasonic Industry	.	.		.	.			.	.	.	.		.			
Procell (Duracell)		.			.						.					
RRC											.					.
Tadiran							.				.					
TDK														.		
Varta		.	.	.	.		.			.	.	.				
Wamtechnik										.	.					

# Wireless Wireless charging

	RFID	NFC	ANT	Bluetooth	Zigbee	Thread	Wi-Fi	LoRa	SigFox	LTE Cat M1	NB-IoT	Optical wireless comms	Tx coil	Rx coil	Tx module	Rx module
	Wireless												Wireless charging			
Abracon													•	•		
Alps Alpine				•												
Amphenol													•	•		
AVX (Ethertronics)								•								
Fujitsu				•												
Molex													•	•		
Murata	•	•		•			•	•	•	•	•					
Panasonic Industry		•		•	•	•	•									
Pulse													•	•		
Taiyo Yuden		•	•	•	•	•	•					•				
TDK													•	•	•	•
Vishay													•	•		

# Antennas

	NFC	ISM, Zigbee and Bluetooth	WLAN and Wi-Fi	NB-IoT, Cat-M1	GSM and LTE	GNSS (GPS, Glonass, BeiDou, Galileo)	DAS
	Antenna						
Abracon	•	•	•	•	•	•	
Amphenol	•	•	•	•	•	•	•
AVX (Ethertronics)	•	•	•	•	•	•	
Molex	•	•	•	•	•	•	
Murata	•						
Pulse	•	•	•	•	•	•	•
Taiyo Yuden		•	•			•	
TDK	•	•					
TE Connectivity	•	•	•	•	•	•	
Vishay		•	•			•	
Yageo	•	•	•		•	•	

# Sensors

	NTC	PTC	RTD	Digital IC	Thermal read switch	IR thermopile	Thermocouple	Pressure	Force, load, torque and tension	Humidity	VOC and CO <sub>2</sub>	Dust	Flow	Water level	
	Temperature							Pressure		Gas and liquid					
Abrakon	.														
Alps Alpine								.	.	.					
Amphenol Advanced Sensors	.	.				.		.		.	.	.			
AVX (Ethertronics)	.		.					.							
Bourns								.		.					
Bulgin															
C&K Components															
CTS															
Grayhill															
Harvatek															
Innovative Sensor Technology			.	.						.			.		
KEMET					.										
Kingstate															
Molex (Contrinex)															
Murata	.	.						.		.					
Nidec Copal								.							
Omron						.		.		.	.	.	.		
Panasonic Electric Works															
Panasonic Industry	.					.		.							
Piher															
PUI Audio															
Pulse															
Qinlon															
SMI (TE Connectivity)								.							
TDK	.	.						.		.					
TE Connectivity	.		.	.		.	.	.	.	.	.		.	.	
Vishay	.	.	.												

Sensors continue...

# Sensors

	Accelerometer, vibration and shock	Inclinometer and gyro	Geomagnetic	GMR, AMR and TMR	Inductive and hall transducer	Capacitive touch	Resistive potentiometers	Optical encoder	Magnetic encoder/potentiometer	Photo interruptor	Photoelectric	Ultrasonic	Passive Infrared (PIR)	Light convergent reflective	Magnetic proximity (reed and hall)	Current	Sunlight, ambient light	Pulse oximetry (SpO <sub>2</sub> )	Microphone	Human vision
																Current	Optical	Sound	Image	
Abracon																				
Alps Alpine			•	•			•		•								•			
Amphenol Advanced Sensors																		•		
AVX (Ethertronics)					•		•													
Bourns							•	•	•											
Bulgin											•									
C&K Components								•							•					
CTS					•		•	•												
Grayhill								•	•											
Harvatek										•								•		
Innovative Sensor Technology																				
Invensense (TDK)	•	•	•	•													•			•
KEMET (Yageo)													•				•			
Kingstate																			•	
Moxel (Contrinex)					•						•									
Murata	•	•		•			•					•	•							
Nidec Copal							•	•	•								•			
Omron	•					•				•				•						•
Panasonic Electric Works													•							
Panasonic Industry	•			•			•													
Piher							•		•											
PUI Audio												•							•	
Pulse																	•			
Qinlon												•								
SMI (TE Connectivity)																				
TE Connectivity	•	•		•	•		•		•			•			•				•	
Vishay							•		•											

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