IP&E News

4th Quarter 2022

knitter-switch Inductive Award 2021

Arrow Electronics named Best Distributor Inductive by knitter-switch

Global award recognises sales levels and growth

Arrow Electronics has been recognised by knitter-inductive as its Best Distributor, Inductive Products, globally. The award covers Arrow's performance on products including inductors, transformers and common mode chokes during calendar year 2021.

The criteria for the award were based on the level of sales and the growth for knitter-inductive products achieved during that period. Arrow was particularly successful in Central and Eastern Europe and the Nordic region.

Matthias Hutter, vice president product management and supplier marketing, Arrow EMEA, commented, "Arrow has had a long and successful relationship with knitter-switch. We began working with them in 1967, one year after their foundation, and the fact that we are still winning awards with them today demonstrates the continuing strength of the engagement. knitter values Arrow's ability to assist customers in designing in the right products to meet their needs and we, in turn, continue to be impressed by knitter-inductive's level of quality and service, as well as its extensive range."

Hanspeter Külb, CEO of knitter-switch, commented: "Our cooperation with Arrow is one of the keys of our success from the very beginning. We are very happy that Arrow is supporting and following us so successfully with our new brand, knitter-inductive. We are sure that we will further grow our inductive business together."

from left to right: Markus Hefter, Director Product Management EMEA, Arrow Electronics, Matthias Hutter, Vice President Product Management & Supplier Marketing EMEA, Arrow Electronics, Hanspeter Külb, CEO, knitter-switch, Jørn Bjerregaard Hansen, Sales Manager Nordic & Baltics, knitter-switch, Axel Prauss, Supplier Business Manager, Arrow Electronics, Torben Rix, Director PEMCO Marketing EMEA, Arrow Electronics, Graeme Dorkings, Vice President Supplier Marketing PEMCO, Arrow Electronics, Julia Wolf, Asset Group Manager, Arrow Electronics

IP&E by Arrow
Providing components for success

Components – EMEA

Content

Smart Beehive

IoT: Connected beehive thanks to energy-saving MCU and Internet

With its 12-month European Graduate Program, Arrow offers university graduates the opportunity to apply their ambitions, talents and potential in practice and thus be prepared to work on customer projects. A project from the Arrow Graduate Program is “Smart Beehive”.

Objective

How are my bee colonies doing right now? Are there optimal conditions in the beehives? What is the status of honey production? How can I react promptly to honey theft or even vandalism? Conventionally, beekeepers can only collect information on these questions as diligently as their bees due to the fact the beehives are often in different locations, some of which are far away, and it takes time and peace to look inside the beehive.

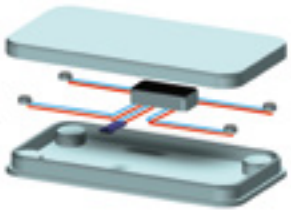
The focus of Franz De La Torre Westphal’s bachelor thesis was therefore the question of how best to support beekeepers in their work. Solution approach: With a device that provides you with the relevant data via the Internet. The aim was to develop a prototype Smart Beehive, which transmits the collected data from the beehive and its surroundings to the Internet.

The following status variables of the beehive should be recorded: weight, air temperature, relative humidity and finally movement to be able to detect manipulations to the bee dwelling. Another challenge for the development of the device was the lack of standardization of beehives since the construction can vary greatly from region to region. Another requirement was compliance with German and international standards for the new development

Approach

A prototype was developed including the communication interfaces in a robust standard housing, an energy-saving MCU and a primary cell for the energy supply. The MCU controls the sensors for temperature, humidity, mass, and movement measurement, stores the data and pre-processes the data before transmission. The data is sent via a Sigfox interface to the cloud server. Sigfox is a low power wide area network. The connection to the Sigfox network was already the subject of earlier work in the Arrow Graduate program and could be adapted and adopted.

Realization



With the Smart Beehive system, beekeepers always receive detailed information about the condition of their beehives. They can react promptly to manipulation and vandalism. The device on the beehive consists of proven and approved components, which are also designed to be extremely energy-efficient for a long service life. The selected cloud connection via the Sigfox network also requires little power. Wiring and housing are both robust and weatherproof and withstand insect damage in addition. The system can be installed and operated by non-professionals.

IP&E Products for Smart Beehive

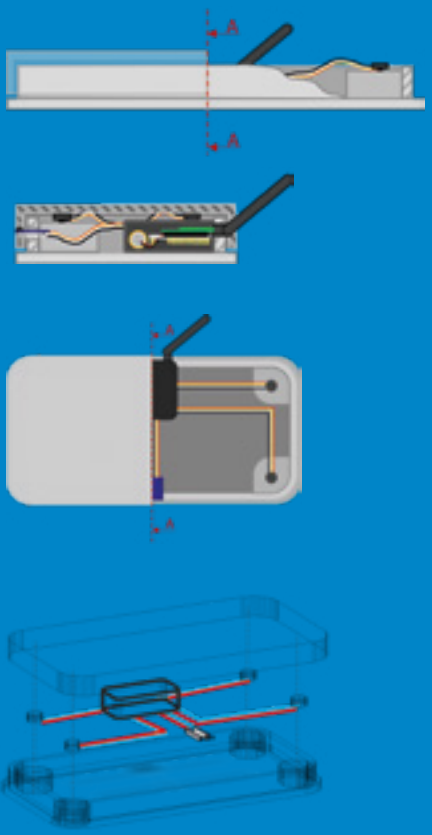
Sensors
- TE Connectivity – Compact Compression Load Cell FX29Kx-100A-0100-L

Connectors
- Molex – SL Socket with Shrouded Pin Header (4 Sides)
- Molex – SL plug (crimp housing, 4 sides) + SL crimp socket

Antennas & Batteries
- Dynamis - LI-110 /S (ER14250, Size ½ AA) Li-SOCl2; cell
- Pulse - W3312B0100 ISM 868/915 MHz PCB antenna with coax feed (ISM 868/915 MHz)

MCU
- STMicroelectronics – STM32 low power MCU with ARM®32-bit Cortex®-M3 CPU Core HTS221 Temperature & Humidity Sensor

Wireless
- S-T-E-A-M - SubGHz transceiver module with Sigfox firmware SIGFOX-MOD1-E



Author: Franz De La Torre Westphal – EMEA Engineering Graduate 2019. Today supporting exciting and innovative customer projects in Vienna, Austria

3M Science. Applied to Life.™

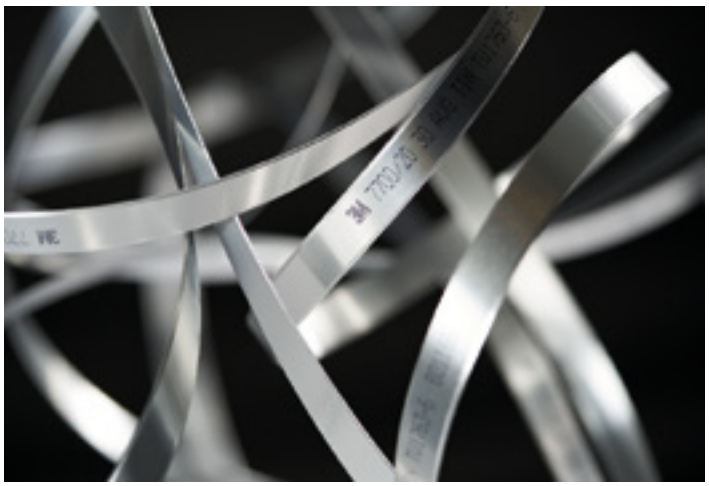
Extensive Portfolio of Cables

3M offers an extensive portfolio of cables built for reliability and convenience to offer the performance you need in a bright application field.

Applications
- Industrial Electronics
- Medical
- Communication

3M cable attributes at-a-glance:
- Flat and round cable versions
- Shielded and none shielded solutions
- Ribbon and twisted pair cable
- Halogen free version
- High- and medium flex models
- Different pitches, conductor sizes, insulation materials, stranded or solid wires
- Jacketed or unjacketed solutions

Flat Cables	Round Cables	Halogen Free Cables
High Flex Life Cable, 3250 Series	Round, Shielded/Jacketed, Flat Cable, 3659 Series	High Flex Life Cable, HF319 Series
High Flex Life Cable, 3319 Series	Round, Jacketed, Flat Cable, 3759 Series	Round Conductor Flat, LSHF Cable, HF447 Series
Round Conductor Flat Cable, 3365 Series	Round, Shielded Jacketed, Disc. Wire Cable, 3600B Series	Round Conductor Flat Cable, HF365 Series
Twisted Pair Flat Cable, 1700 Series	Round, Shielded/Jacketed, Disc. Wire Cable, 3750 Series	Round, Shielded/Jacketed, Flat Cable, HF659 Series
Color Coded Flat Cable, 3302 Series	Round, Shielded/Jacketed, Disc. Wire Cable, 3644X Series	Round, Jacketed, Flat Cable, HF759 Series
Round Conductor Flat Cable, 3625 Series		
Round Conductor Flat Cable, 3447 Series		
Shielded/Jacketed, Flat Cable, 3517 Series		
Round Conductor Flat Cable, 3749 Series		
Round Conductor Flat Cable, 3801 Series		
Round Conductor Flat Cable, 8125 Series		
Round Conductor Flat, Controlled Impedance Cable, 7700 Series		



Click here or scan QR-Code for specific questions.

Click here or scan QR-Code for more information.

Amphenol

Single Pair Ethernet (SPE) IP20 Connectors

Single Pair Ethernet (SPE) connectors for Industrial applications bring direct Ethernet connectivity to peripheral devices like sensors, actuators, and vision system cameras that operate at speeds up to 1 Gb/s.

- Fully compatible with IEC 63171-6 interconnects from other authorized vendors ensuring future compatibility and investment security
- Single pair cable reduces cost, weight and space requirements compared to 2 and 4 pair cabling
- Mechanically robust and secure latching with 360° shielding for excellent performance in harsh environments

- Field terminable IDC plugs provide installation flexibility
- SPE eliminates the need for costly protocol conversion gateways

Orderable at arrow.com
- MSPE-P2L0-2A0

1500 V Connectors for Energy Storage

The new Amphenol series battery|mate, with an IP30 rating when mated, offers reliable operations in any power distribution and battery storage system.

- Increase power carrying capacity
- Future/upgrade proof from 1000 V to 1500 V
- Error-free connections with mechanical coding
- Safety with visual locking and touch proof contacts
- Easy assembly/disassembly
- High flexibility

Key Features
- 200 A Carrying capacity
- >500 mating cycles
- Colored & mechanical coding
- Visible locking
- For 35 mm² and 50 mm² cable
- UL 94 V0
- IP30
- M8 Thread
- Touch Proof IP2XB

Amphenol can also support with complete cable assemblies for a true plug & play solution as well as shielded versions.

Please ask your Arrow contact for more information on the new series:
- C040 C0FA035 070 1, Cable pluss 35 mm²
- C040 C0FB035 070 1, Cable minus 35 mm²
- C040 C0FA050 070 1, Cable pluss 50 mm²
- C040 C0FB050 070 1, Cable minus 50 mm²
- C040 S0CA000 070 1, Chassis pluss
- C040 S0CB000 070 1, Chassis minus

BELDEN

Boosting Labor Productivity in Warehouse

Belden's Labor Productivity Solution for material handlers addresses the most critical challenge on the path to automation - the slow, error-prone human tasks that create inefficiencies and waste and accounts for 55 % of material handling factory costs.

Belden can unlock 35 % improvement in operational costs and 10–25 % improvement in order fulfillment.

What a Labor-Efficient Warehouse looks like

- Improved scanning and sensor technology to automate inventory/asset tracking, counting, and management
- Consolidated and optimized warehouse storage solutions
- Automated tools and equipment to assist workers on the warehouse floor and reduce reliance on labor
- Comprehensive warehouse facility monitoring by security equipment

Connectivity Solution Portfolio

- Filed terminators
- Connectivity tools
- Pre-terminated cord-set
- Active and passive I/O blocks
- Racks, enclosures, and patch panels

Orderable at arrow.com

- I/O Modules
- I/O Connectors
- M12 Connectors

BOURNS®

Award Winning IsoMOV™ Protectors

Bourns® IsoMOV™ Series Hybrid Protection Component has been chosen Passive Product of the Year by Electronic Products.

Bourns® IsoMOV™ hybrid overvoltage surge protectors, with their integrated gas discharge tube structure and extended temperature range, promise better reliability and longer life in certain harsh environments. The IsoMOV™ component family continues Bourns' legacy of quality, innovation and design in overvoltage surge arrestors and sets a new standard of robustness in each size class.

The lineup includes three series of devices; Model IsoM3, IsoM5 and IsoM8. With nominal surge ratings of 3 kA, 5 kA and 8 kA, these revolutionary new protectors offer performance usually found in larger traditional MOV devices. Using proprietary computer-aided design techniques to model performance, Bourns engineers have combined its revolutionary EdgMOV™ technology, which greatly reduces typical MOV edge failures, with a unique integrated structure to create a device with the equivalent function of a discrete MOV and GDT in series. The result is a familiar radial disc MOV package that is only slightly thicker and of substantially smaller diameter than similarly rated conventional devices.

Compared to conventional MOV devices, the IsoMOV™ hybrid protectors feature much lower leakage across their extended temperature range resulting in an extended product life as leakage currents are known to age MOV devices. The series combination of MOV and GDT devices is also tolerant of AC line voltage swells. Additionally, the combination yields a device with low capacitance. This means low insertion loss making this new series an ideal solution for the protection of industrial communications, power line communications and high-speed information and communication technology (ICT) equipment.

Features & Benefits
- Space saving solution
- Enhanced reliability over long life
- Reduced down time and service cost
- Enhanced surge ratings
- Increased voltage protection
- Ring wave tolerant
- Suitable for exposed circuits
- Low leakage current
- Low capacitance
- AC voltage ratings: 175 V–555 V
- Normal surge ratings: 3 kA–5 kA–8 kA
- UL 1449 Type 4 CA listed

Applications
- Critical AC power applications
- White goods
- Motor drives
- AC inverters
- LED lighting and signage
- Surge Protective Devices (SPDs)

Orderable at arrow.com
- IsoM3
- IsoM5
- IsoM8

FUJITSU

Fujitsu's arc extinguishing technology

New technologies that further enhance relay functionality are part of an ongoing development process at Fujitsu Components.

The recently released FTR-E1-HC relay, developed to safely switch high voltage systems such as solar panels and electric vehicle battery storage systems features Fujitsu's arc extinguishing technology.

Arc Extinguishing Technology
When switching power on, electrons move from one pole to the other, bridging the airgap, the arc will cease to exist the moment the circuit is closed.

However when an application requires switching higher voltages in the same footprint, this increases the potential for arcing. Arcing is triggered when potential difference between poles causes the air gap to heat up, so intensely that insulating air turns into conductive plasma. When that happens, the safe insulator becomes a dangerous live conductor. An obvious solution would be to give more room between the coils; more air in the gap to quench that arc. Unfortunately, this goes against the drive towards miniaturization, especially in automotive and other applications. Which is why Fujitsu has developed several technologies for arc extinguishing including the use of permanent magnets to ensure compact, safe, robust and affordable solutions.

About the FTR-E1-HC

High DC voltage switching capability
The FTR-E1-HC relay is a high-voltage relay with DC load switching capability with a contact rating of 60 A, 400 VDC

Designed to protect contacts when switching high DC voltage
The FTR-E1-HC achieves its high performance due to Fujitsu's arc extinguishing technology. The arc extinguishing technology doesn't use gasses such as hydrogen or nitrogen gas, which are commonly used to minimize relay size and weight, instead Fujitsu uses a permanent magnet and arc extinguishing plates.

By not using a hermetically sealed ceramic structure needed for gas, Fujitsu minimizes the risk of malfunction due to leakage after shock or long-term use.

Small size to save space
The FTR-E1-HC has the smallest size and weight in its class measuring just 28.3 × 43.6 × 36.8 mm and weighing just 75 g. In most applications size is limited, and this relay helps to achieve a minimum space occupation by its small size.

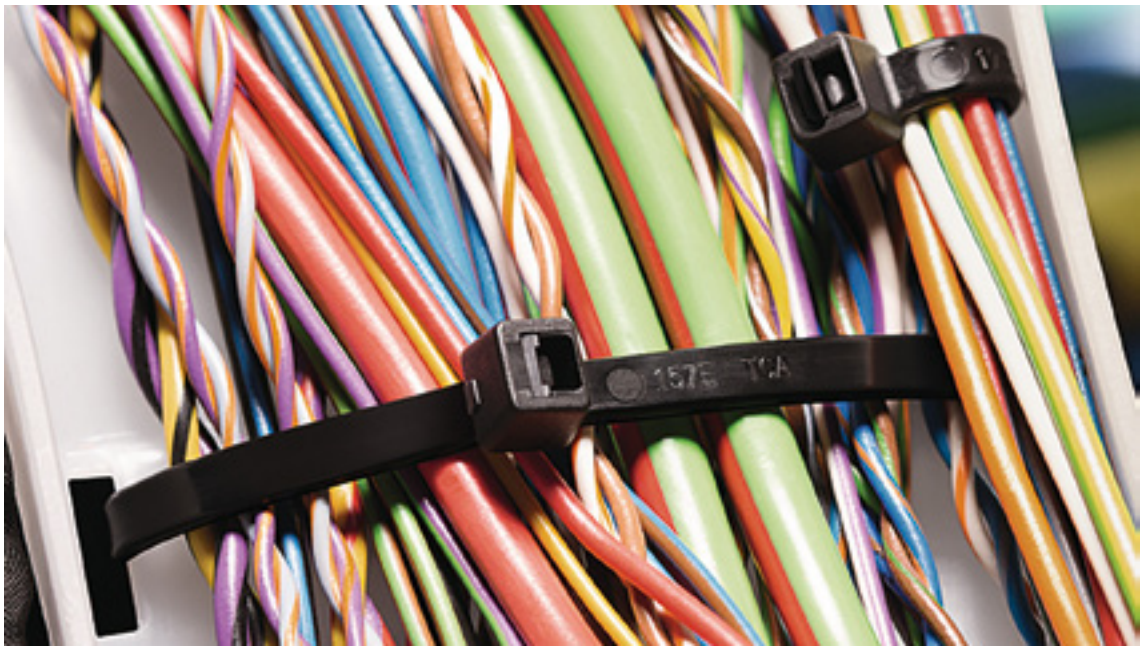
No specific polarity requirement for the connection of the load terminals
The non-polarized contacts support charging and discharging, since there is no polarity, it is applicable of both current flow directions (forward /reverse) on charging or discharging specifications such as V2H.

Low power consumption to achieve energy efficiency
The low coil power consumption of the FTR-E1-HC, just 0.9 W(-HC:1.2 W) results in less self-heat generation, making the relay very suitable for use at ambient temperatures at even + 85 °C, when 50 A switching (60 °C when 60 A switching)

Click here or scan QR-Code for more information about Fujitsu Relays and arcing technology

HellermannTyton

T-Series Cable Ties



T-Series quality all-round cable ties for diverse fastening and fixing applications include a wide variety of sizes, colours and additives to enhance the tie's properties. T-Series Cable Ties are available in dimensions ranging from as little as 2.3 × 83 mm to 12.5 × 1030 mm. These reliable all-rounders deliver high strength and high abrasion resistance at temperatures ranging from -40 °C to 85 °C.

PA66W cable ties are UV-stabilised, making them ideal for outdoor use where sunlight quickly make standard ties go brittle.

PA66HS T-Series ties are heat-stabilised. The plastic is modified to withstand operating temperatures up to 105 °C. It also delivers good chemical resistance.

For applications with higher continuous temperatures up to +150 °C, T-Series ties made from PA46 are available, whereas PA66 V0 material offers a higher level of fire protection.

To protect sensitive wire insulation from damage, HellermannTyton manufactures T-Series Cable Ties in an outside serrated version.

Orderable at arrow.com

PA66 *Weather-resistant
- 111-01969 T18R-PA66W-BK
- 111-03570 T30LL-PA66W-BK
- 111-01919 T18R-PA66-NA

PA66 Heat-stabilised
- 111-01950 T18R-PA66HS-BK
- 111-03459 T30L-PA66HS-NA

PA66 Flame-retardant
- 111-93019 T30R-PA66VO-WH

PA46
- 111-00526 T50L-PA46-NA
- 111-00969 T50R-PA46-BK

ITT Cannon APD Connectors

ITT Cannon's APD is a full plastic connector series available in 1 to 51-way variants. With high power, high voltage, and high-density variants, APD is ideal for critical industrial and transportation applications such as heavy and off-road vehicles. It features a proven bayonet coupling design with reliable sealing up to IP69K, multiple color and coding options, and is based on ISO 15170. Compact, lightweight, easy to assemble, and ultra-reliable, you can rely on APD when it matters most.

Key Product Features

- Lightweight and space-saving
- Cost-effective
- Based on ISO 15170
- Fast and simple assembly
- High power & high voltage variants
- Mechanical and color coding
- 1 to 51-way layouts
- Wire range: 0.35 – 50 mm² (AWG 22 – AWG 0)
- Operating temp: -40 °C to +125 °C (+140 °C for 4-way)
- Sealing: IP67/IP69K (with individual wire seals)

Applications

- Heavy and off-road vehicles
- Truck and bus
- Construction vehicles
- Electric vehicles
- Agricultural equipment
- Recreational vehicles

Orderable at arrow.com

- APD1AP37R
- APD1AP6EP
- APD1AP7
- APD1BS37
- APD1BS7
- APD1BSK2
- APD1CP7
- APD3BSK2
- APD5BSH
- APD6BSH

50 A – 10 A High Current Zero Ohm Jumpers

Metal plate zero ohm jumpers allow high currents in very small sizes (0402=10 A, 0603=26 A, 0805=31.6 A, 1206=50 A) compared with standard thick film jumpers.

Metal plate zero ohm jumpers are ideal devices in designs where thick film jumpers cannot handle higher currents.

Thick film jumpers typically have a resistance of around 50 mΩ. This resistance value while being adequate for low current applications will dissipate too much power with higher currents and will push the device outside its limits.

As a comparison, a 0805 size thick film jumper is rated up to currents of 5 A whereas the equivalent sized TLRZ part will be able to carry up to 31.6 A. These jumpers are ideal for replacing thick film devices in existing designs where these parts are struggling with current capacity, or on redesigns where space is at a premium. (TLRZ 0402 allows higher current rating than a 2512 thick film jumper.)

These devices are also useful in 'versioned' circuits where some functionality is omitted on certain versions, but where the same PCB is used for all variants. In this case the jumper can be used to connect the wider functionality circuit blocks.

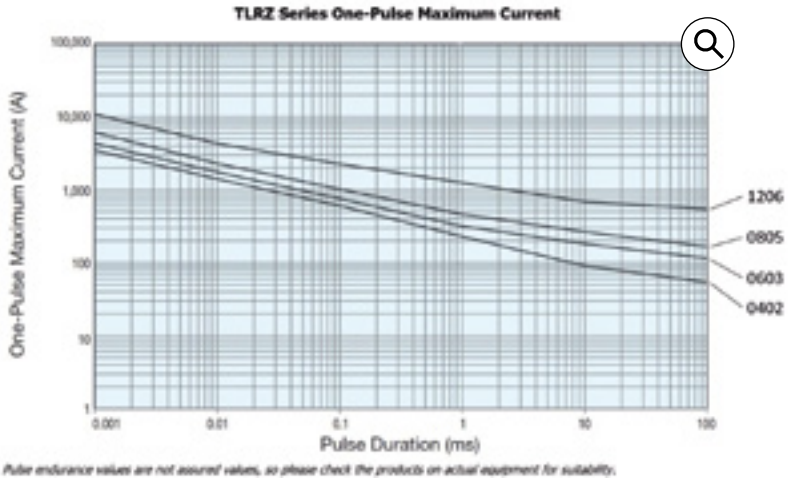
The TLRZ-jumpers are AEC-Q200 tested and suitable for high reliability automotive applications.

Features and Benefits
- Up to 50 A max. rated current in size 1206
- 0402, 0603, 0805 and 1206 inch sizes
- Low profile
- 0.2 mΩ max. resistance value (0603-1206)
- Operating temp. range: -65 °C to +170 °C
- EU-RoHS compliant
- AEC-Q200 tested

Applications
- Motor drives
- Automotive electronics
- Industrial automation
- Power supplies
- Networking
- Communication equipment
- Consumer devices
- White goods

The newest updated datasheet of these metal plate jumpers can always be found on the supplier website of KOA Corporation **www.koaeurope.de.**

Orderable at arrow.com
- TLRZ (High Current Metal Plate Jumper)



Pulse endurance values are not assured values, so please check the products on actual equipment for suitability.

Soft, Silicone-Free Gap Fillers

Two thermal gap fillers new from Laird Performance Materials, a DuPont business, reflect both the properties desired by design engineers and the collective know-how of Laird.

The first is Laird™ Tflex™ HP34, a non-silicone gap filler boasting superior deflection properties. It delivers eye-popping 24 w/mK bulk thermal conductivity and maintains its high conductivity and thermal performance under increased pressure. Expertly aligned graphite fibers ensure higher performance than other graphite products. Additionally, Tflex HP34's softness contrasts with most graphite-based materials. It exhibits low contact resistance with mating surfaces, retains its properties in applications under increased pressure, and produces no to low oil bleed.

Operating temperature range for Tflex HP34 is -40°C to 125°C. The naturally tacky material results in no need for an added adhesive layer. Tflex HP34 meets RoHS and REACH requirements.

Among the many applications for Tflex HP34 are 5G antennas/radomes, wireless infrastructure devices, routers, servers, notebooks, tablets, portable and smart home devices, and telecom cabinets.

See Laird's Tflex HP34 application video at **www.laird.com**.

The Laird™ Tflex™ SF10 Series is another soft, silicone-free, high performing thermal material. This gap filler offers significant 10 W/mk thermal conductivity, low shore hardness, and has low relaxation pressure to minimize board and component stress.

Very little pressure is required to reach the lowest possible thermal resistance. The low pressure versus deflection characteristics of Tflex SF10 enables large mechanical tolerances without overstressing boards or sensitive components. Tflex SF10 produces little to no oil bleed. Operating temperature ranges from -40° C to 125°C.

As a non-silicone application, Tflex SF10's superior thermal performance makes it suitable for use in the automotive sector, in routers, wireless infrastructure products, drones, satellites, smart home devices, and gaming systems.

Tflex SF10 is extremely soft but can be handled and applied manually without the need to add a fiberglass or other reinforcement layer.

The environmentally friendly solution meets RoHS and REACH and is available in Europe and Asia via Laird facilities in Liberec, Czech Republic, and Shenzhen and Shanghai, China.

See Laird's Tflex SF10 application video at **www.laird.com**.

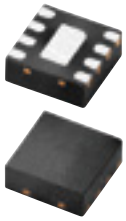
Littelfuse®

Protection IC (eFuse)

The new Protection IC (eFuse) product line utilizes an innovative design that provides a wide range of power input and highly integration protection to against overcurrent, overvoltage, short circuit, inrush current, reverse current and overtemperature events. Integrated over voltage, over current, and over temperature protection features, and inrush current are available in small packages.

LS0505EVD22 Series, Protection IC
5 V, 5 A eFuse with Over voltage & Over current Protection in DFN 2 × 2 Package

Markets and Applications:
- Bluetooth headsets
- Wearable devices
- Tablet PCs
- Charging cables
- Battery devices
- Adapter powered devices

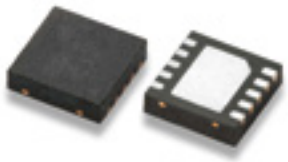


LS0504EVT233 Series, Protection IC
5 V, 4 A eFuse with Over voltage & Over current Protection in SOT23 3 Package

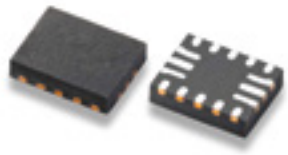
Markets and Applications:
- Bluetooth headsets
- Wearable devices
- Tablet PCs
- Charging cables
- Battery devices
- Adapter powered devices

LS1205ExD33 Series, Protection IC
18 V, 5 A eFuse with Programmable Current Limit & Output Voltage Clamp

Markets and Applications:
- HDD and SSD drives
- Adapter powered devices
- PC / Notebooks
- FAN controls
- Networking



LS2406ERQ23 Series, Protection IC
28 V, 6 A eFuse with True Reverse Blocking & Fast Rule Swap
- USB Type C 20 V PD
- Networking
- DC fans
- Industry
- Storage (SSD/HDD)



Orderable at arrow.com
- LS0505EVD22
- LS0504EVT233
- LS1205EVD33
- LS1205EFD33
- LS2406ERQ23

Voltage	Parts	Key Features	Vmax (V)	Current (A)	Ron (mΩ)	OVP (V)	Reverse Blocking	Soft Start	Package	EV. Board
5 V	LS0505EVD22	30 V max Rating Adjust Current Limit	30	5 (Adj)	50	6.2	NA	Yes	DFN2x2_8	Available
	LS0504EVT233	30 V max Rating Simple Pin-count	30	4	50	6.2	NA	Yes	SOT23-3	
	LS0504EDD12	Low Ron Small Package	6	4	26	6.3	NA	Yes	DFN1.2x1.6_4	
12 V	LS1205EVD33	3.8 V/5.7 V/14.4 V OVP Adjust Current Limit	20	5 (Adj)	25	3.8/ 5.7/ 14.4	NA	Yes (Adj)	DFN3x3_10	Available
	LS1205EFD33	14.4 V OVP Adjust Current Limit	20	5 (Adj)	25	14.4	NA	Yes (Adj)	DFN3x3_10	
	LS12052BD33	14.4 V OVP Adjust Current Limit	20	5 (Adj)	25	14.4	Control Pin	Yes (Adj)	DFN3x3_10	
24 V	LS2406ERQ23	Adjust OVP / OCP Reverse Blocking	28	6 (Adj)	24	Adj	Yes	Yes	QFN2.5x3.2_1 6	
	LS2405IDD23	Ideal Diode	28	5	35	NA	Yes	NA	DFN2x3_8	
	LS24062RQ23	Adjust OVP / OCP Bi-driection	30	6 (Adj)	24	Adj	"Yes Bi-direc-tion"	Yes	QFN2.5x3.2_1 6	

C&K NOW PART OF Littelfuse

C&K is part of Littelfuse Inc

C&K now a part of Littelfuse Inc. offers a broad range of miniature tactile, ultra-miniature tactile and micro miniature tactile switches for printed circuit board mounting. Available in J bend, gull wing, illuminated, sealed, low-profile, low-noise, SMT and through hole versions, C&K's tactile switches are designed for the most demanding applications.

When it comes to switch haptics, C&K tactile switches are the preferred interface solution for applications including:

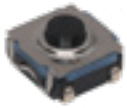
- Automotive (air bags, heating/AC, door handles, column switches)
- Aerospace (main cabin lights, flight attendant buttons)
- Consumer (cell phones, headsets, remote controls, wearable electronics)
- Medical (hearing aids, health diagnostics, portable equipment)
- Industrial (control panels, instrumentation, power supplies)
- Computer (keyboards)
- Telecom/network equipment
- Handheld applications (power and selection switches, volume control, keyfobs)

NanoT series

PTS125 Series

PTS645V Series

TLS series



KSC11 Series

KMR6 Series

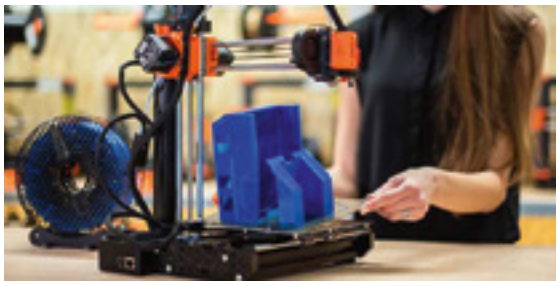
KMR7 Series

Orderable at arrow.com

- NanoT series
- PTS125 Series
- PTS645V Series
- TLS series
- KSC11 Series
- KMR6 Series
- KMR7 Series

molex

Supporting a New Wave of Rapid Prototyping



3D printing is truly a technology of the future. What was once only a vision of science fiction has become an incredible reality, where business and individuals alike can design and create physical 3D items at the click of a button.

To stay at the head of the pack, companies of all sizes and verticals – from global aerospace organizations to tomorrow's tech startups – must design, test, and produce at velocity. But for years, manufacturing, particularly at the design phase, has been a bottleneck. When building a new device, companies had to turn to specialized machinists to create custom parts and enclosures to make their designs go – and while they waited for their parts to be made, the design process would grind to a halt.

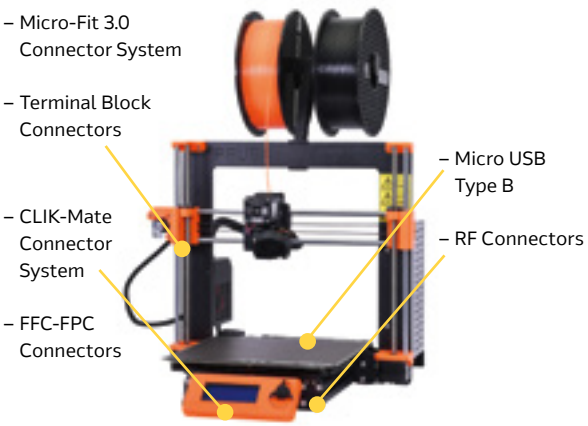
Today, 3D printing has turned this paradigm on its head. What was once a niche technology has evolved and, in doing so, opened the door to rapid prototyping in ways that were never thought possible. In fact, 3D printing has leapt so far forward as a technology that 3D-printed parts are finding their way into consumer grade products with outstanding results.

For Prusa, one of the leading global 3D printer manufacturers, supporting this new wave of innovation is a labor of love that has led to explosive growth – from just a small start-up to an international organization with more than 750 employees. To support this growth while maintaining a top-tier level of service and product robustness, Prusa needed to work with the right partners to build their tech.

So, they turned to Arrow Electronics and Molex.

Lowering the barrier for rapid prototyping without compromise

All Prusa products are open source, which means customers are free to use and customize their printers and products as they see fit. To help enable this, many of Prusa's printers are sold as a kit, where the customers are responsible for final assembly. With this approach serving as their business model, Prusa was in search of a connector manufacturer that could meet their high standards. They needed products that were robust, but also intuitive and easy to use. Furthermore, 3D printers are used in a variety of environments – from woodshops to garages, production floors to clean rooms – and need to be able to operate reliably in the face of harsh conditions, extreme temperatures, vibration, and exposure to several chemicals. Prusa needed connectors that were up to that challenge. Molex provided the answer.



Orderable at arrow.com

- Micro-Fit 3.0 Connector System
- PTS125 Series
- Terminal Block Connectors
- CLIK-Mate Connector System
- FFC-FPC Connectors
- Micro USB Type B
- RF Connectors

Click here or scan QR-Code to read the full article on arrow.com

2 W Bipolar Output SMT DC-DC Converters

Murata has announced the availability of its MGJ2 series, a new line of surface mount DC-DC converters. Comprised of six models, the lightweight units each have a 2 W power rating and are supplied in compact, low-profile form factor modules measuring just 19.49 mm × 14.99 mm × 4.39 mm dimensions.

Available in 12 V and 15 V voltage rails, they feature +15 V/-5 V, +15 V /-9 V, and +20 V/ -5 V bipolar outputs. They are intended to accompany the IGBT and SiC-based MOSFET high-voltage gate drivers used in industrial, renewable energy, and mobility applications.

Features

- Optimized bipolar output voltages for IGBT/ SiC & MOSFET gate drives
- Reinforced insulation to UL62368 recognition pending
- ANSI/AAMI ES60601-1 recognition pending
- Continuous barrier withstand voltage 2 kV
- Characterized CMTI >100 kV/uS
- Ultra-low isolation capacitance 3 pF
- 5.7 kVDC isolation test voltage “Hi Pot Test”
- 5 V, 12 V & 15 V inputs
- +15 V/-9 V, +15 V/-5 V & +20 V/-5 V outputs
- Characterized partial discharge performance

Orderable at arrow.com

- MGJ2

PANTA© IDC Jumper

The IDC insulation displacement technology is suitable for applications that require a particularly robust design, first-class transmission characteristics and a high degree of flexibility. The PANTA IDC jumper combines the advantages of the flexible THT solderable PANTA FIX jumper on one side with the pluggable interfaces of e.g. TE, Lumberg, Pancon, STOCKO and other on request.

This design enables use in difficult assembly and also permits simple replacement of individual components thanks to the pluggability and detachability of the plug connection during servicing, optional on one or both sides of the assembly.

Benefits

- Pluggable and detachable connection of assemblies / PCBs
- Connectors with standardized interfaces from Lumberg, Pancon, STOCKO and TE
- The conductors of the PANTA FIX Jumper are protected, corrosion- and vibration-proof in the insulation displacement terminals
- Flexibility between the modules to be connected through the PANTA FIX Jumper
- Loose contacts, contact resistances and overheating are avoided
- Long-term stability of the connection and contact reliability

		Sumida Jumper					Validation	
Possible IDC connectors*	Supplier	Article group	Pitch N (3,96 mm)	Pitch A (2,54 mm)	Pitch F (2,5 mm)	Pitch B (1,27 mm)	Automotive	Non-Automotive
	Lumberg Connect GmbH	RAST-2.5			•			•
		MICA Micromodul				•		•
	Pancon GmbH	MAS-CON	•	•			•	
	Stocko Contakt GmbH & Co KG	Eco-Tronic			•		•	
		RFK 2			•		•	
	TE Connectivity	MicroMaTch				•	•	

*many more could be possible

Panasonic
INDUSTRY

New High Voltage Relay

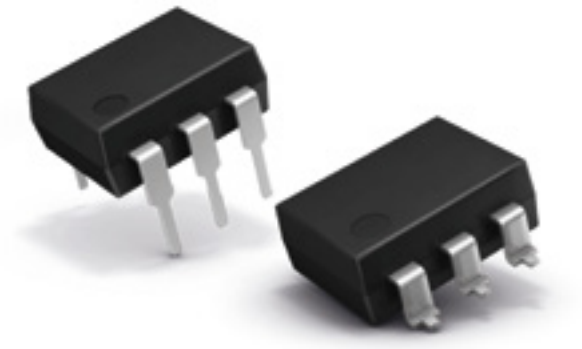
New Panasonic Industry 1FormA AQV209G(A) PhotoMOS® high voltage relay surpasses the predecessor by a factor of ten

The new Panasonic Industry 1FormA PhotoMOS® relay AQV209G(A) must be considered an undisputed breakthrough in terms of high-power semiconductor switching – remarkably outperforming the last generation's specs by a 10 times higher switching capability.

By combining proven technology with next-gen materials and Galvanic isolation between input and output circuit, the semiconductor, photo-coupled relay achieves an unrivaled output rating of 1,200 V at 0.75 A. Continuously, with unlimited lifetime, ready for both AC and DC load.

Notwithstanding this performance increase, this latest member of the PhotoMOS® family is still coming in a small standard DIP6-pin package, feasible by an outstanding low ON resistance of 1 Ohm / 1.0 Ω.

Based on future-proof technology, the AQV209G(A)type is a truly interesting substitute for a lot of conventional reed relay applications or as a replacement for mercury containing types. Ensuring quiet, fast and bounce free switching, it will be a recommended choice for a wide field of modern industrial applications, testing and measuring equipment, controls, or I/O modules.



Key features
- 1,200 V load voltage
- 0.75 A load current
- AC / DC dual use
- 1FormA type
- 1.0 Ω ON resistance (typ.)
- DIP6 type, SMD or THT
- Noiseless switching
- Endless lifetime
- Galvanic isolation between input and output circuit

Orderable at arrow.com
- AQV209G(A)

Panasonic
INDUSTRY

1500 V PhotoMOS® Relay in DIP5 Package

New 1500 V PhotoMOS® relay in miniature DIP5 package from Panasonic targets industrial BMS

The new PhotoMOS® HE relay series from Panasonic Industry Europe offers 5 kV I/O isolation and an increased clearance and creepage distance on output side, plus miniature 1-Form-A DIP5 packaging, making it particularly suitable as the switching solution for Industrial Battery Management Systems (BMS) in storage systems, charging stations, and numerous other high voltage measurement and infrastructure control applications.

Rated at 1,500 V/20 mA, new AQV258H5(A) HE series PhotoMOS® relays have a MOSFET output and enjoy an almost unlimited lifetime if used according to the specifications. On-resistance remains stable throughout the entire lifetime – and AQV258H5(A) HE series PhotoMOS® relays – unlike electromechanical devices - are unaffected by vibration, a significant benefit in many industrial applications.

New PhotoMOS® series AQV258H5(A) relays also feature a low control current and low leakage current and produce no switching noise. Devices come with 5 pins to accomodate different creepage and clearance requirements, but a 6 pin version is also available. Both types are offered with through-hole or surface-mount terminations.

Key features
- Load voltage: 1,500 V
- Load current: 20 mA
- Increased creepage & clearance distance on output side
- Low control current
- Low leakage current
- Stable on-resistance over lifetime
- No switching noises
- Unlimited number of switching cycles
- DIP5 package

Orderable at arrow.com
- AQV258H5(A) HE

PANDUIT

Edge Clips - On the edge, get set, go

Edge Clip Cable Tie Mounts - On the edge
Panduit's new Edge Clips are versatile, quick, and secure to attach directly to panel and frame edges. This allows cables or wires to be routed along or perpendicular to the edge in a user-friendly manner. To do this, simply press the clip directly onto the respective edge and use the matching cable tie for bundling. Drilling into the existing structure is unnecessary, components remain intact to resist corrosion and overall installation efficiency is increased. The high-performance clips offer high tensile strength thanks to the specially developed metal lips and can still be attached by hand without tools. The combination of innovative Edge Clips, robust cable ties and cable tie bases from Panduit find their professional use in the cabling of motor vehicles, rail vehicles, heavy-duty machinery, trucks, all the way to solar parks for cable routing underneath panels.

Versatile Mounting
Allows cables or wires to be routed along or perpendicular to the edge.

Close Fit
The cable tie mount saddle provides close fit for small diameter bundles.

Storage Reduction
Versatile mounting reduces the space of storage required and gives you much more flexibility when mounting on site.

Expanded Range
The Edge Clip has an extended range from .7 – 3 mm edge thicknesses as well as a larger clip offering for 3 – 6 mm edge thicknesses.

High Performance
The high-performance metal clip delivers high pull off force yet still allows for easy hand installation without tools.

Orderable at arrow.com

- CME12-M300
- CME24-M300
- CMS12-M300
- CMS24-M300
- CMEA12-2S-D300*
- CMEA24-2S-D300*
- CMSA12-2S-D300*
- CMSA24-2S-D300*
- CMEB12-2S-D300*
- CMEB24-2S-D300*
- CMSB12-2S-D300*
- CMSB24-2S-D300*
- CMEA12-B2S-D300
- CMEA24-B2S-D300
- CMSA12-B2S-D300
- CMSA24-B2S-D300
- CMEB12-B2S-D300
- CMEB24-B2S-D300
- CMSB12-B2S-D300
- CMSB24-B2S-D300

CLT Power Inductors

TDK presents with the CLT32 series power inductors with extremely compact dimensions and excellent electrical values thanks to their new design. The 9 types cover an inductance range of 17 nH to 440 nH and are designed for 13.5 A to 60 A saturation currents. With a compact footprint of 3.5 × 2.5 mm and an insertion height of 2.5 mm, these are the most compact SMT power inductors in their performance class. They are constructed for a temperature range from -40 °C to 165 °C including self-heating.

These AEC-Q200 certified components are designed with a solid copper coil over-molded with a ferromagnetic plastic compound. The coil ends already functions as terminals which significantly increases reliability – especially for automotive applications. Due to the solid copper coil, these products can achieve an exceptionally low RDC value, keeping losses to a minimum.

Applications
- PMICs for supplying high-performance processors for ADAS/AD
- DC/DC converters with high clock rates

Features & Benefits
- Extremely compact size of 3.2 × 2.5 × 2.5 mm
- High saturation current of up to 60 A
- Operation temperature of up to 165 °C
- High reliability due to the innovative design without internal connections
- Extremely low RDC
- Certified according to AEC-Q200
- Suitable for switching frequencies up to 10 MHz

The ohmic resistance is only 0.39 mΩ at an inductance value of 17 nH.

The compact and highly robust CLT32 inductors are ideal for use in safety-relevant automotive applications in ADAS/AD. High performance processors used in these fields requires currents in double-digit ampere range. Power Management ICs (PIMCs) are used as power supplies that provide these high currents. Here, power inductors for stabilization are key components at the outputs. The CLT32 series is designed for switching frequencies up to 10 MHz and already meets future requirements placed on DC/DC converters with high clock rates.

Orderable at arrow.com
- CLT32

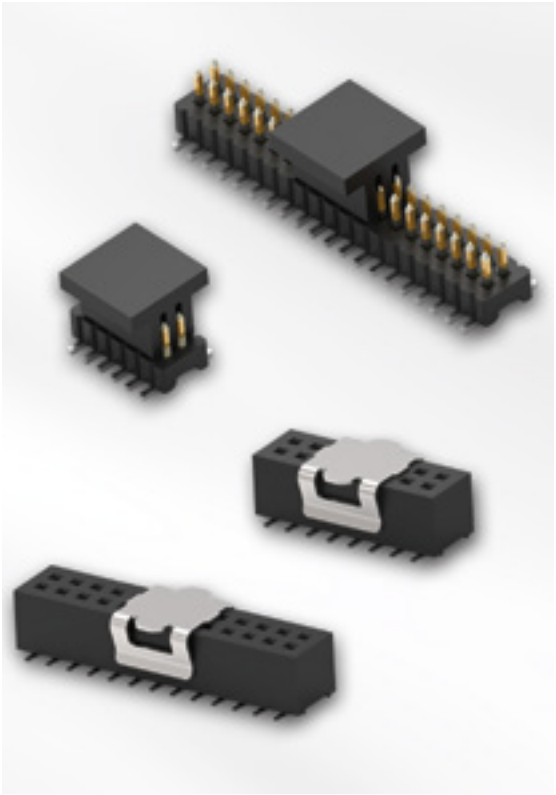
Click here or scan the QR-Code for more information: www.tdk-electronics.tdk.com

AUTHORIZED DISTRIBUTOR

AMPMODU Board Interconnection System

TE Connectivity AMPMODU Board Interconnection System – Fine Pitch Products

TE Connectivity's (TE) AMPMODU Small Centerline Interconnection Systems are fine pitch **1.0 mm [0.0394"]** signal connectors that offer 85 % space savings on the board when compared to standard 2.54 mm pitch products. Their dual-beam contact design provides a reliable electrical connection even in severe shock and vibration environments.



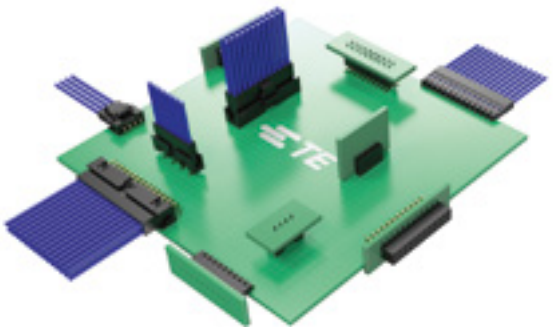
Benefits

- Reliable signal transfers through two points of contact even in severe shock/vibration applications
- Manufacturing flexibility in automated environment with surface mount configuration with pick and place cap
- Improved durability and corrosion resistance with gold plating
- Time savings thanks to reflow capable materials
- Greater flexibility in assembly of boards with dual entry receptacles

Centerline	1 mm
# of Rows	Double row
Position Size	5 - 50 per row
Mounting Style	Surface mount
Orientation	Vertical
Plating Options	– Gold flash (5 µ") – 30 µ" gold
Packaging	– Tube w/ cap – T&R w/ cap

TE Connectivity AMPMODU Board Interconnection System – Fine Pitch Products

TE's AMPMODU **2 mm [0.0787"]** system occupies 3 % less space on a printed circuit board as compared to traditional 2.54 mm centerline connectors. This connector system is available in both board-to-board and wire-to-board mating options and utilizes a dual-beam contact design to enable 2 points of contact for increased signal reliability during mating.



Benefits

- Two-point electrical stability for reliable signal transfer
- Multiple options for Board-to-Board stacking by various header and receptacle combinations
- Ease of assembly with automated surface-mounting and through-hole reflow manufacturing
- Reliable connection in high vibration environments with detent and positive latching variants
- Ergonomic and easy mating/unmating process with positive latching variant
- Headers are intermateable with other major brand receptacles
- Design flexibility with various crimp terminal options
- Fast termination/installation without the need to strip the wire with IDC wire receptacles
- IDC and crimp receptacles mate with the same headers
- Interchangeable IDC and Crimp Snap-In contacts allow for easy replacement of damaged/faulty contacts

Centerline	1 mm
# of Rows	Single row, double row
Position Size	SR: 2–25, increments of 1 DR: 4–50, increments of 2
Mounting Style	Through hole, Surface mount, Wire to board
Orientation	Vertical, horizontal
Plating Options	– Tin – Gold flash (5 µ"/0.1 mm) – Gold (15 µ"/0.38 mm) – Gold (30 µ"/0.76 mm)
Packaging	– Bulk w/o cap – Tube w/o & w/ cap – T&R w/o & w/ cap

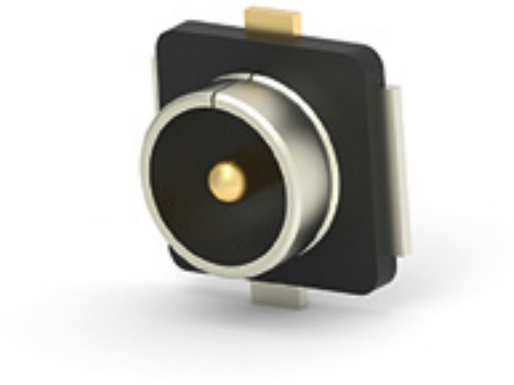
Orderable at arrow.com

- AMPMODU

AUTHORIZED DISTRIBUTOR

Micro-Coaxial Receptacles

TE Connectivity's (TE) Micro-Coaxial Receptacles and Cable Assemblies offer a wide range of options for component and end item design, each with high-performance specifications and built to last. Built with backwards compatibility and drop-in replacement in mind, customers can easily incorporate these solutions without rearranging their PCB layout in most cases. As a total end-to-end RF solutions provider, TE can meet multiple customer needs with our extensive product portfolio and robust customer support activities.



Target Markets
- Consumer Electronics
- IoT
- Telecommunications
- Medical

Key Benefits
- Excellent Electrical Performance and Manufactured with Precision Tolerances
  - Impedance: 50 Ohms
  - Frequency Range: DC to 9 GHz
  - Robust and Heavy-Duty Design
- Competitive Price and Fast Delivery
  - Cost Savings Compared to Next-Best Alternative
  - Multiple Custom Configurations Available
- Total End-to-End RF Solutions Provider
  - Drop-in Replacement - Redesign of PCB Not Required
  - TE Connectivity's (TE) RF Solutions Portfolio Can Support a Full RF Solution, Allowing for Ease of Design and Purchasing, While Streamlining the Supply Chain

Applications
- Wearables
- Medical Devices
- Wireless Sound Systems
- IoT
  - Smart Home
  - Security/Surveillance
  - Smart Meters
- Wireless Routers and Networking
- POS Transaction Systems

Orderable at arrow.com
- 2337019-1
- 2334884-1
- 1909763-1

ZF Energy Harvesting Switch

No batteries, No wires

Due to the rising connectivity of mobile devices, industrial applications, smart home applications and vehicles, the importance of wireless technology for data communication increases continuously. One example is the Energy Harvesting Switch (EHS) from ZF. Apart from the electronic and mechanical components, the software with various radio protocols is offered which enables data exchange between devices.

Wired installations are often an automatic choice when planning a new construction project. However, this requires serious building work initially, and when it comes to extensions. In addition these installations are very expensive, and future renovations become more difficult. Battery-powered systems have various disadvantages for the user, as batteries need to be replaced frequently which involves labour for maintenance, and the cost of purchasing new batteries. The disposal of batteries is not environmentally sustainable either.

Click here or scan the QR-Code for more information.

Energy harvesting solutions can resolve the disadvantages that come from using wires and batteries. Using ZF's technology based on the inductive principle, a small generator can create mechanical energy typically around 330 µWs by manual actuation. This energy output is enough to reliably transmit RF commands to smart applications. The communication range varies between the protocols used and achieves up to 30 meters indoors, using the frequency ranges of either 865 MHz or 915 MHz. The main advantage is to save maintenance time/cost for more than 20 years, due to the long lifetime of the energy harvesting generators. Up to 1,000,000 switching cycles can be achieved. Different RF products from ZF are already available in three RF standards - KNX-RF, EnOcean and Bluetooth. Also, customer-specific protocols can be designed on request.

Orderable at arrow.com

– AFIG-0007

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Five Years Out