



AUTHORIZED DISTRIBUTOR



ttieurope.com

TTI & TE Connectivity Industrial Communication Portfolio

TTI, Inc., – A Berkshire Hathaway Company



ttieurope.com



The Specialist in Electronic Component Distribution



**Global Distribution Centres
with more than 195,000m²
of automated warehousing
in North America, Europe
and Asia.**

Why Choose TTI?

Founded in 1971, TTI has steadily grown to become a world leading specialist distributor of electronic components. The company was founded on the premise that passive component purchasing could be made more efficient by offering product specialization, customer-driven service and proprietary supply chain solutions.

Global Distribution Centres

Our European headquarters is located just outside of Munich, Germany in Maisach-Gernlinden. In total, we have 42,600m² of dedicated warehouse space and local sales and technical support in over 40 locations across Europe. TTI has more than 195,000m² of automated warehousing in North America, Europe and Asia. All are linked into a global warehouse management system that provides superior customer service and overall business efficiencies. Wherever you are in the world, TTI can support you.

Year after year, customers rate our inventory availability, on-time delivery and accuracy among the very best in the industry – contact us today to find out what a true specialist has to offer.

Quality and Reliability

TTI is the first distributor to have all global warehouse locations ISO registered and certified to ISO 9001 and ISO 14001 Standards. TTI Europe is also certified to EN9120/EN9100, IECQ-CECC and ISO/IEC 27001 Standards. Additionally, all of our European sales branches are ISO 9001 certified. TTI has one global documentation system that ensures that every TTI branch and warehouse in the world follows the same processes.

Reduce complexity, costs and enable yourself to go beyond existing borders.

Enables IIoT



It brings Ethernet down to the sensor/actuator level in a cost effective way. This connectivity allows real-time data collection and transparent communication, which enables the analysis and exchange of the collected data to accelerate the optimization of productivity, efficiency and process controls.

Facilitates an open ecosystem



The standardization of the Single Pair Ethernet technology enables an ecosystem of multiple suppliers to decrease the risk of production downtime due to supply issues because of the dependency on a single manufacturer.

Reduces Wire Complexity



Single Pair Ethernet enables Ethernet transmission with two wires, rather than four or eight. This provides movement freedom in robotics/machinery applications as less wires are need (2 vs 4 or 8). The reduced number of wires enables a small form factor and makes the cabling cost-effective. Less weight on the wire leads to less copper, so the application is able to move faster and uses less energy.

Allows high speed communication



Higher bandwidth in a smaller package; connections up to 1 Gb/s and cable length up to 1000 meter for 10 MB/s.

PODL – Power over data line



Data and power up to 50W over the single twisted pair used for data transmission.

Hybrid power data solution



The separate power pins of the hybrid data/power connector as defined in IEC 63171-6 enable power levels beyond PODL up to 192W for 24V and up to 392W for 48V (8A).

Single Pair Ethernet (SPE) Technology

What is Single Pair Ethernet?

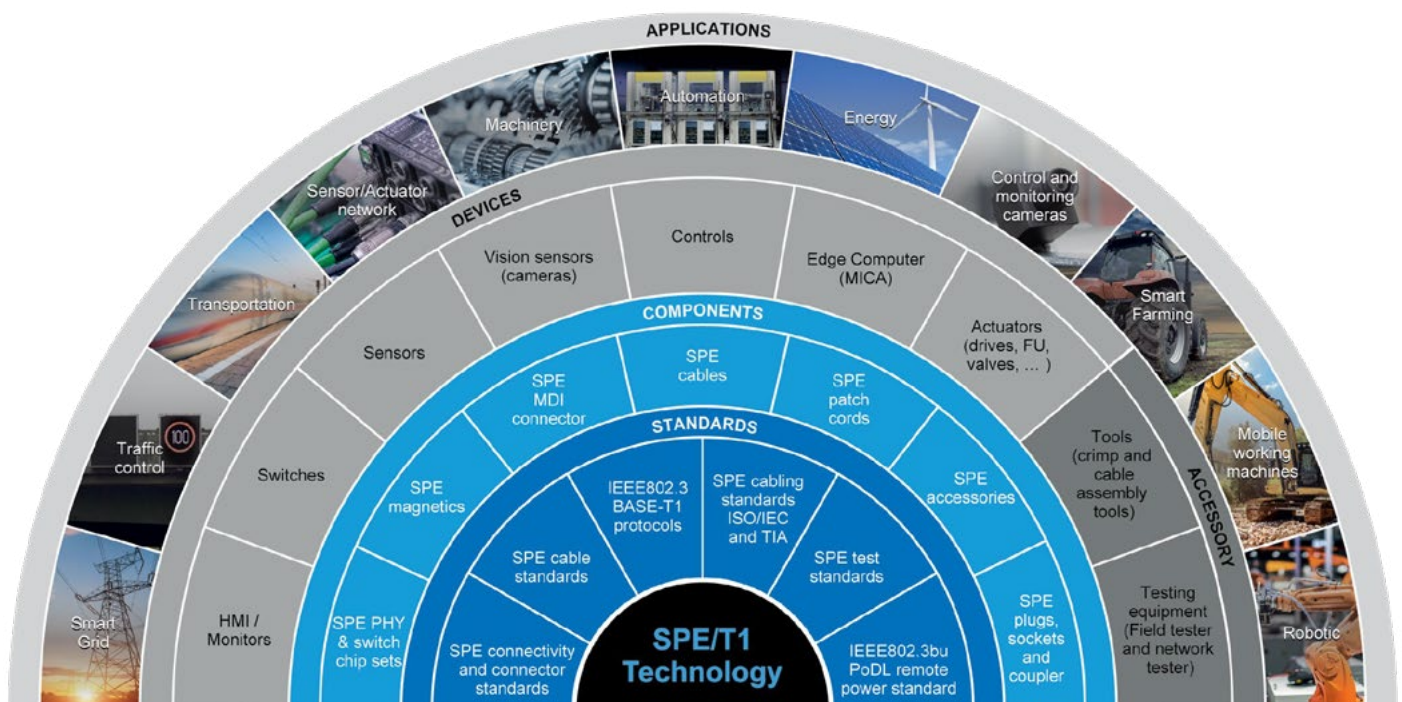
Single Pair Ethernet, or SPE, enables Ethernet transmission with two wires, rather than four or eight. For years, TE Connectivity (TE) has been driving innovation in the automotive industry with this smaller, lighter, smarter technology. TE is now bringing SPE's powerful advantages to the infrastructure of manufacturing facilities. This slim, lightweight yet powerful connectivity solution enables the industry to digitize at the field level and is seen as the infrastructure for the Industrial Internet of Things.

Why Single Pair Ethernet (SPE)?

With IIoT, the industry is placing ever tougher demands on network technology. The need for a more cost-efficient and simple infrastructure at the field level has grown significantly. In the future, even small devices should be connected to the company network in a transparent manner. Process control, communication for value-added services and safety functions are going to run uniformly on Ethernet in the future. The legacy bus systems will be gradually substituted by Ethernet to avoid media discontinuities. At the same time, the 2-pair and 4-pair Ethernet infrastructure is too expensive, too large and oversized for most sensors and actuators. This applies to infrastructure components such as cables and connectors and components intended to be integrated with devices. The trend towards miniaturisation leads to the fact that ever smaller space is available inside a device, e.g. for passive network components, and on the device, e.g. for a connector socket. Finally, the demands on the possible data transmission rates of sensors are increasing. These demands can be satisfied by the light, small, cheap and powerful infrastructure SPE is providing.

SPE Industrial Partner Network

TE Connectivity is proud to be a founding partner of the SPE Industrial Partner Network. Together with all members, TE is driving this technology to get widely adopted by the industry and promoting IEC 63171-6 as the relevant connector standard for industrial applications. The SPE/T1 Partner Program brings together strong brands for the purpose of jointly communicating and positioning the technology of Single Pair Ethernet on the industrial market. The Single Pair Ethernet market is being developed to open up new business opportunities. For users, this means a simple picture of IIoT in conjunction with Single Pair Ethernet, with clarity and transparency across the board – from standardization to the components and devices and through to the applications.



M8/M12 Connector System

Customer Benefits

- Reduce system downtime and meet the lifetime expectation of applications in harsh environments with reliable industry standard M8/M12 solutions that includes quick turn, prototype cord sets
- Decrease installation and tooling costs with easy to handle field installable connectors
- Supports higher bandwidth needs – meeting the transmission requirements of up to 10Gb/s



T4113011041-000



T4111011041-000



T4110002041-000



T4112002041-000



T4013019031-000



T4011019031-000



T4010008031-000



T4012008031-000



2327989-1



T4140012051-000



T4145035051-001



T4131012051-000



T4162123004-001



T4152214004-001



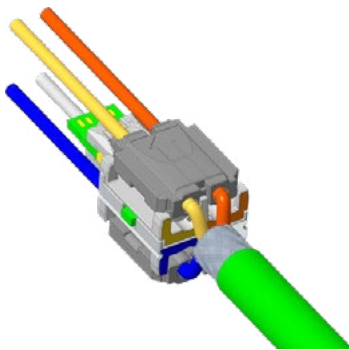
T4062123003-001



T4052214003-001

Customer Benefits

- Stable connections are guaranteed by the optimized signal path design, 360 degrees shielding and a contact system with double contact point
- High board retention and metal latch prevents unnecessary disconnections
- Small form factor reduces PCB area and equipment height
- Two unique interfaces (Type 1 and Type 2) prevent unwanted mismatching
- Improved coplanarity and LCP materials allow for the latest assembly process technologies



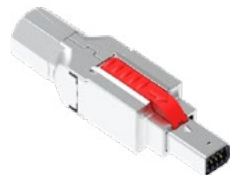
2201855-1



2040008-1



2294417-1



2350278-1



2271656-1

Industrial RJ45 Jack with integrated magnetics

Customer Benefits

- Integrated magnetics reduces the (analog) design efforts required by the customer
- Jacks with Power over Ethernet (PoE) offer a highly integrated connectivity solution with improved EMI performance and allow for remote powering of peripherals over the Ethernet cable
- Industrial grade gold plating (30µinch over 50µinch nickel) improves corrosion resistance reducing equipment electrical problems over lifetime
- Offering standardized Tape & Reel or Tray packing for fully automated or manual assembly process
- TE's products (260°C reflow capable) fit industrial assembly/solder processes without the need for an extra assembly/solder step
- Industrial discrete magnetics allow customers to design their Ethernet Interfaces in a discrete form with customer specific transmission and overvoltage characteristics.



2301996-2



2301997-2



2301995-4



2301994-8



2120892-1



2337822-1



2337822-2



2337824-2



ttieurope.com



Contact TTI today to see what a true specialist can offer.

Corporate Headquarters

TTI, Inc.
2441 Northeast Parkway, Fort Worth, Texas 76106 U.S.A.
T: +1 817 740 9000 | F: +1 817 740 9898
E: information@ttiinc.com

European Headquarters

TTI, Inc.
Ganghoferstr. 34, 82216 Maisach-Gernlinden Germany
T: +49 (0) 81 42 66 80 0 | F: +49 (0) 81 42 66 80 490
E: sales@de.ttiinc.com

European Sales Offices

Austria

Vienna
T: +43 (0) 18 79 85 90
E: sales.vienna@at.ttiinc.com

Benelux

Eindhoven
T: +31 (0) 40 290 1616
E: sales.benelux@nl.ttiinc.com

Bulgaria

Varna
T: +359 52 51 10 59
E: sales.varna@bg.ttiinc.com

Czech/Slovak Republic

Brno
T: +420 541 126 714
E: sales.brno@cz.ttiinc.com

Denmark

Copenhagen
T: +45 (0) 43 29 35 35
E: sales.copenhagen@dk.ttiinc.com
Risskov
T: +45 (0) 38 41 31 00
E: sales.copenhagen@dk.ttiinc.com

Estonia

Tallinn
T: +372 664 81 00
E: sales.estonia@ee.ttiinc.com

Finland & Baltic Region

Espoo
T: +358 98 94 65 200
E: sales.finland@fi.ttiinc.com

France

Brive
T: +33 (0) 5 55 92 92 93
E: sales.france@fr.ttiinc.com

Bron

T: +33 (0) 472 81 2030
E: sales.lyon@fr.ttiinc.com

Bruz

T: +33 (0) 2 99 77 60 84
E: sales.rennes@fr.ttiinc.com

La Ciotat

T: +33 (0) 442 84 4142
E: sales.marseille@fr.ttiinc.com

Montigny Le Bretonneux

T: +33 (0) 130 13 7380
E: sales.paris@fr.ttiinc.com

Germany

Berlin
T: +49 (0) 30 8877 40 200
E: sales.berlin@de.ttiinc.com

Dortmund

T: +49 (0) 2301 91 304 0
E: sales.dortmund@de.ttiinc.com

Frankfurt

T: +49 (0) 6102 5999 100
E: sales.frankfurt@de.ttiinc.com

Hanover

T: +49 (0) 5 11 7 80 59 0
E: sales.hannover@de.ttiinc.com

Munich

T: +49 (0) 81 42 66 80 110
E: sales.munich@de.ttiinc.com

Pforzheim

T: +49 (0) 7231 14788 0
E: sales.stuttgart@de.ttiinc.com

Hungary

Budapest
T: +36 1 40 22 111
E: sales.budapest@hu.ttiinc.com

Ireland

T: +44 (0)1494 460000
E: sales.ireland@ie.ttiinc.com

Israel/Ray-Q Ltd.

Airport City
T: +972 3 975 3333
E: sales@ray-q.com

Italy

Civitanova Marche
T: +39 0733 81 8655
E: sales.milan@it.ttiinc.com

Florence

T: +39 (0) 55 094 63 76
E: sales.milan@it.ttiinc.com

Milan

T: +39 02 822 521
E: sales.milan@it.ttiinc.com

Naples

T: +39 081 4245719
E: sales.milan@it.ttiinc.com

Triveneto

T: +39 049 7802311
E: sales.milan@it.ttiinc.com

Rome

T: +39 0774 57 1302
E: sales.rome@it.ttiinc.com

Norway

Drammen
T: +47 (0) 92 66 87 66
E: sales.norway@no.ttiinc.com

Poland

Kwidzyn
T: +48 (0) 55 279 67 57
E: sales.poland@pl.ttiinc.com

Portugal

Vila Nova de Famalicao
T: +351 252 493084
E: sales.barcelona@es.ttiinc.com

Romania

Cluj Napoca
T: +40 (0) 733 339 002
E: sales.romania@ro.ttiinc.com

Russia

Saint Petersburg
T: +7 (0) 812 4962053
E: sales.russia@ru.ttiinc.com

South Africa

Pretoria
T: +27 86 111 2844
E: sales.southafrica@za.ttiinc.com

Spain

Barcelona
T: +34 (0) 93 645 25 75
E: sales.barcelona@es.ttiinc.com

Madrid

T: +34 (0) 91 416 11 90
E: sales.madrid@es.ttiinc.com

Vizcaya

T: +34 (0) 94 623 25 80
E: sales.bilbao@es.ttiinc.com

Sweden

Gothenburg
T: +46 (0) 31 741 12 90
E: sales.gothenburg@se.ttiinc.com

Stockholm

T: +46 (0) 8 594 11 800
E: sales.stockholm@se.ttiinc.com

Switzerland

Baar
T: +41 (0) 41 76741 90
E: sales.swiss@ch.ttiinc.com

Egypt, Morocco & Tunisia

T: +216 (0) 71 862 693
E: sales.tunis@fr.ttiinc.com

Turkey

Istanbul
T: +90 (0) 216 688 91 75 76
E: sales.turkey@tr.ttiinc.com

United Kingdom

Basildon
T: +44 (0)1268 498460
E: sales.essex@uk.ttiinc.com

High Wycombe

T: +44 (0)1494 460000
E: sales.london@uk.ttiinc.com

Manchester

T: +44 (0) 161 872 2019
E: sales.london@uk.ttiinc.com

Resellers or Distributors

TTI Connect - Europe
T: +49 8142 6680 168
E: service@tticonnect.com

TE Connectivity, TE connectivity (logo) and TE are trademarks owned or licensed by the TE Connectivity Ltd. family of companies. Other products, logos and company names mentioned herein may be trademarks of their respective owners.

TTI, Inc. Headquarters Europe



www.tuev-sued.de/ms-zert



IECQ-P BSI 14.0013 (Germany)
IECQ-P BSI 14.0013-02 (Basildon)
www.iecq.org