

TE CONNECTIVITY'S

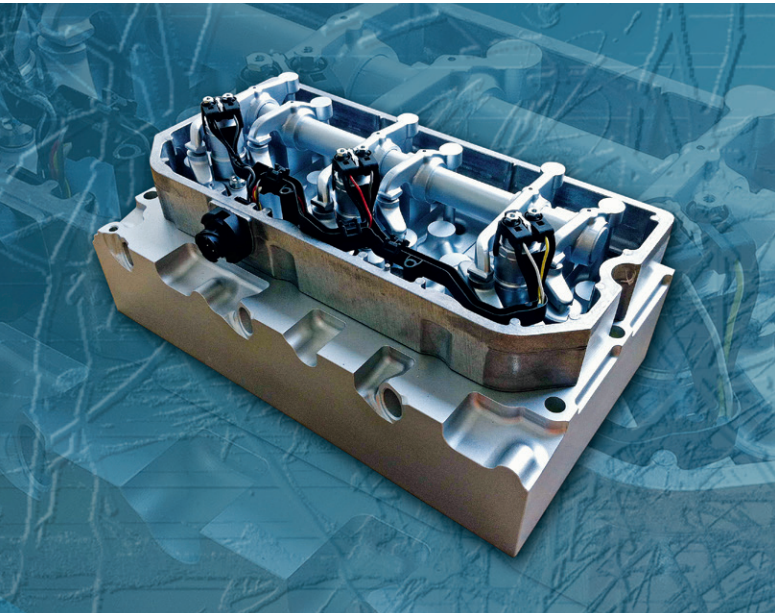
CYLINDER HEAD WIRING SOLUTIONS

FOR INDUSTRIAL & COMMERCIAL VEHICLES

WE GO TO EXTREMES TO MAKE EVERY CONNECTION COUNT

CYLINDER HEAD WIRING SOLUTIONS

FOR INDUSTRIAL & COMMERCIAL VEHICLES



TE CONNECTIVITY INDUSTRIAL & COMMERCIAL TRANSPORTATION OFFERS A COMPREHENSIVE PORTFOLIO OF CONNECTORS AND CABLE ASSEMBLY PRODUCTS FOR CYLINDER HEAD WIRING APPLICATIONS.

Coupled with our continuously expanding range of capabilities, we are providing the commercial transportation market with highly integrated systems and cost effective solutions.

We at TE Connectivity are working with our customers providing them turnkey solutions by integrating all of TE's key technologies of electrical

interconnect, sealing capabilities, Raychem wires and fuel injectors interconnect. This extensive experience in connectors and cable assembly enables TE to provide its customers with:

- Turnkey Solutions
- High Performance Solutions
- Cost Competitive Solutions

TE Connectivity is developing cylinder head wiring for heavy duty diesel engines with cable channels and pass-through connectors. Cylinder head wiring assemblies are designed to withstand a highly dynamic temperature range, which is caused by a massive thermocycling, substantial vibration load by the engine and overspray of engine oil. Cylinder head wiring assemblies have proven themselves in a variety of engines in truck, agricultural, and construction applications under harsh environment conditions.

CYLINDER HEAD WIRING SOLUTIONS

TURNKEY ENGINEERING SOLUTIONS

TE Industrial & Commercial Transportation offers fully-tested, custom turnkey designs that meet OEM specifications. The turnkey designs utilize connectors, wires, brackets, cable arrangements, and cable channels, in a variety of materials. For turnkey solutions, OEMs only need to design the required opening in the cylinder head and/or valve cover.

Product Portfolio

- Single Cylinder
- Two Cylinder
- Three Cylinder
- Four Cylinder
- Six Cylinder and more.

Applications

- Heavy Duty Diesel Motors
- Common Rail Engines
- Pump Nozzle Engines
- Harness System Undervalue Cover for Injectors
- Sensors to Cylinder Head Exit Connections

Mechanical

- Amount of Positions: 2 – 24 pos.
- Operating Temperature: -40° C to +140° C
- Mating Force: max. 10 N (2 pos.) 0.6 – 3Nm (6 – 24 pos.)
- Mating Cycles: max. 50 (silver plated terminals)
- Vibration: ISO 16750-3, Test VI

Electrical

- Operation Voltage: max. 36 VDC (at sea level)
- Insulation Resistance: > 10⁷ Ω (at 500 VDC)

PRODUCT PORTFOLIO

Key features

- Cylinder head wiring includes electrical connections for injectors, glow plugs, sensors and actuators.
- Oil tight pass-through connectors are available based on different interfaces. Examples include AMPSEAL 16, AMP MCP, DT series, and circular connectors.
- Connectors accept multiple terminal styles, including circular or flat, stamped and formed, or screw machine terminals.
- Leakage check on the interface connector.
- Polarization, mechanical, color coded keying options.
- Ring tongue solutions for injector terminations.
- Captured screw designs for cable channel fixation.
- Cable support channel design.
- Cable protection solutions.
- High temperature wires.
- Push back test of terminals.
- Integrated secondary locking device delivered in pre-locked position.
- Capability for fully tested design according to OEM specifications.
- 100% tested harness with electrical end of line check.
- Cleanliness requirements according to OEM.



CYLINDER HEAD WIRING SOLUTIONS

COST COMPETITIVE SOLUTIONS

TE Industrial & Commercial Transportation provides customers with low cost, customized cylinder head wiring solutions. TE's support channels simplify installation by avoiding the need for additional cable ties and fixations. The self-finding guides for the injectors help reduce handling time, prevent mismatching of ring terminals, and make motor installation easy and cost effective. TE's oil tight connectors provide reliable environmental sealing and accept high temperature wires that withstand up to 200°C temperatures.

Combining TE's cable support channels, oil tight connectors, and high-temperature wires helps reduce the total installed costs of cylinder head wiring.



Benefits of Cylinder Head Wiring

- **Less Risk of Damage**
 - wires withstand high temperatures up to 200°C
 - mechanical protections of wiring
 - oil blocking connectors
- **Easy Service**
 - clear handling of cable assembly for cylinder head
- **Easy Handling**
 - motor installation time is reduced by simplicity of designs and routing
- **Less Assembly Time**
 - cable guide aligns with fixing points
- **Secured Assembly**
 - the captured parts are prepositioned according to the requirements of the cylinder head
- **Reliability**
 - components designed and tested for the application, wires guided inside the engine
 - components designed for the application
 - qualified CHW interfaces and components adaptable for various applications, e.g. engine sensors, gear box applications, etc.
- **Cost Savings**

CYLINDER HEAD WIRING SOLUTIONS

HIGH PERFORMANCE CABLE SOLUTIONS

TE Industrial & Commercial Transportation offers high performance, low price cables for cylinder head wiring. For extreme temperatures, customers can utilize TE's 200° C rated T6 class F thin wall and ultra-thin wall wires. These wires feature advanced Raychem radiation cross-linked fluoropolymer insulation, which offers exceptional high-temperature performance and provides resistance to hot surface damage. The wires increase safety in cases of accidental contact with hot surfaces and have a lower unit cost compared to other fluoropolymer solutions.

TE also produces these wires in a tough thin-wall version that provides space and weight savings and miniaturized connector compatibility benefits.



Benefits

- Lower unit cost at true T6 performance level.
- Improved mechanical and abrasion performance - compared to PTFE and FEP.
- Designed to be compatible with typical wire handling equipment used in harness shops.
- Irradiation cross-linked insulation withstands thermocycling and oil overspray.
- Smaller, lighter wires - with similar temperature performance to larger, heavier wire.
- Offers the opportunity to remove costly overprotection.
- Thin-wall designs - providing improved handling, space savings and miniaturized connector compatibility benefits.

CYLINDER HEAD WIRING SOLUTIONS

HIGH PERFORMANCE OIL TIGHT CONNECTORS

TE Industrial & Commercial Transportation's heavy-duty electrical connectors are designed to withstand dirt, oil, and extreme vibration. These rugged, environmentally sealed connectors meet the specific needs of cylinder head wiring applications.



2 Position Connector

- MCON 1.2 LL
- PN 1-1718643-1 (2 pos. Receptacle Housing)
- Feed through hole: 12 x 16 mm
- Interface drawing: on request



Up to 6 Position Connector

- 1.5mm circular terminals
- ISO 15170 style
- PN 967650-4 (up to 6 pos. Receptacle Housings)
- PN 965577-1 (Right-angle Backshell)
- PN 965785-1 (Vertical Backshell)
- Feed through hole: Ø 30 mm
- Interface drawing: 114-18682



Up to 16 Position Connector

- AMP MCP 1.5 Bayonet Style Connector
- PN 0-1703768-2 (up to 14 pos. Receptacle Housings)
- PN 1-1703963-1 up to 16 pos. Receptacle Housings)
- PN 1-1718284-1 (Right-angle Backshell)
- Feed through hole: Ø 32 mm
- Interface drawing: 114-18753



Up to 24 Position Connector

- AMP MCP 1.5 Bayonet Style Connector
- PN 1703399-1 (up to 24 pos. Receptacle Housings)
- PN 1703402-1 (Right-angle Backshell)
- Feed through hole: Ø 36.4 mm
- Interface drawing: 114-18812

CYLINDER HEAD WIRING SOLUTIONS

HIGH PERFORMANCE OIL TIGHT CONNECTORS

Features

- Made of heavy-duty materials to withstand harsh environments
- Designed to withstand extreme vibration
- Helps reduce manufacturing and service cost
- Oil tight and environmentally sealed
- Several keying options available



4 Position
DEUTSCH
Connector
DTP Series

- Size 12 Circular Terminals
- PN DTPO6-4S
- Feed through hole \varnothing 22 mm
- Interface drawing on request



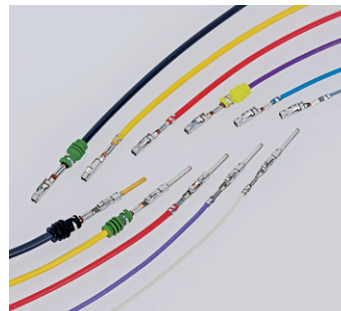
4 Position
DEUTSCH
Connector
DT Series

- Size 16 Terminals
- PN DT06-4S
- PN 1011-263-0405 (180° Backshell)
- Feed through hole \varnothing 24.93 mm
- Interface drawing on request



Up to
8 Positions
Connector

- AMPSEAL 16 Connectors
- Size 16 terminals
- PN 776494-1
(up to 8 pos. Receptacle Housings)
- Feed through hole: \varnothing 32 mm
- Interface drawing on request



Contacts

AMP MCP 1.5, MCON 1.2, round 1.5 mm² and size 16 contact systems are primarily used in cylinder head wiring. Each contact consists of a flat or a round socket, which mates with a flat tab or a round pin.

Many of the contacts have a steel spring and a copper alloy body. The two-piece contact design means that the electrical and mechanical properties are separated.

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TE Connectivity Germany GmbH certified acc. ISO 14001 and ISO/TS 16949:2002

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