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Part numbers in this brochure are RoHS Compliant\*, unless marked otherwise.  
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## Introducing Motorman Hybrid Connector

Decentral servo motors are widely used in many industries and are typically connected via a deterministic system and power-fed by a separate cable. Recently, motors are becoming increasingly networked via fast Ethernet, which offers the benefits of real-time control. However, this does not solve the nuisance of having dual cabling for signal and power.

TE Connectivity launches the Motorman hybrid connector, which integrates communication, signal and power transmission of locally controlled motors within a compact rectangular connector. Two fast Ethernet sockets offer the full benefits of real-time automation control, while reducing cabling complexity.

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## APPLICATIONS

- I/O connector on decentral servo motors
- I/O connector on AC servo motors with PCB
- Drives (amplifiers)
- Packaging, assembly, woodworking or food processing machines

## STANDARDS AND SPECIFICATIONS

- Cat 5e (ISO/IEC11801)
- VDE
- CSA-C22.2
- UL 508C (cable side)
- UL 1977 (motor side)  
Category P V V A 2

## FEATURE

## APPLIED BENEFIT

Compact size of a traditional rectangular connector and hybrid construction (power, communication, signal)	Space savings and less influence on the customer's complex machine architecture
Several pre-customized models available for different customer environments	System integrity and price control for OEMs on the harness
Enclosures: <ul style="list-style-type: none"> <li>• Robust metal</li> <li>• Plastic</li> </ul>	<ul style="list-style-type: none"> <li>• Fits tough industrial environments</li> <li>• Best economical offer for less critical purposes</li> </ul>
Easy-to-open enclosure	Easy and safe configuration due to spacious side access to its interior
Offers space for two 4-pin Ethernet sockets, five power sockets, five signal sockets and one protection earth contact	All signals are bundled in one interface which means only one cable for the customer
Cat 5e communication in heavy environment	Supports industry standards and fast processes
Usage of TE Connectivity's MCON interconnection system and its stamped contacts	Advanced technology combined with lowest applied cost as processing can be done on application tooling that guarantees high reproducibility

## PERFORMANCE DATA

- Environmental
  - IP65 (water & dust protection)
  - 25g (physical shock)
  - Electro-magnetic compatibility (EMC protection) in metal enclosure
- Electrical
  - 2 x 20A / 600V @ 85°C (20A/600V/6kV2)
  - 2 x 20A / 40V @ 85°C
  - 1 x Ground (protection earth)
  - 1 x Braid
  - 5 x 2A / 40V
- Communication
  - 2 x Cat 5e (AWG 22)
- Application
  - Reflow capable

## INNOVATION ACHIEVEMENTS

### Rectangular Size

TE Connectivity adheres to the compact dimensions of a rectangular connector measuring just 41.5 x 22.3 millimeters. The housing and contact insert are fully downward compatible with TE Connectivity industrial heavy duty connector Q series. The complete power supply and signal communication fit within the tight limits of the insert area. Using regular contacts, the connector would have measured twice the targeted size. The dense design could only be realized using TE Connectivity's highly modern MCON system of receptacle contacts.

### Easy Assembly

The connector housing was developed completely from scratch. Its design and assembly strategy follow the requirements of hybrid circular conductors. As cables of this type are stiff due to the wire bundling, shielding and multiple insulations, the housing follows the natural bending geometry of the assembled cable. In contrast to traditional rectangular connectors, the cable does not enter at a right angle but at 100° instead, in order to ensure a good match of cable bending radius and housing geometry. This design avoids excessive bending angles at the beginning of the stripped wire section and makes sure that the contacts are positioned straight in their cavity.

### Cable Seal

The cable jacket seal generates two ring shaped lines of compression around the hybrid cable jacket. As the cable is held straight between the two sealing elements, the level of compression is very equally distributed around the jacket circumference. The optimized design permits it to assemble cables of between 13 and 17 millimeters diameter with one size of seal. As the seal is held in place by a latching protective cap, the assembly can take place without a torque-controlled tool.

## PRODUCT OFFERING

Part number	Description
2120320-1	Receptable Housing (metal)
2120319-1	Receptable Housing (plastic)
2120321-1	Signal Housing (receptable) for MCON 1.2
1719840-3	Receptacle Contact MCON 2.8; (2,5mm <sup>2</sup> )
1718475-3	Receptacle Contact MCON 2.8; (4mm <sup>2</sup> ) MCON 2.8 Receptable Contact
1452653-2	Receptacle Contact MCON 1.2; (0,35mm <sup>2</sup> )
1452656-2	Receptacle Contact MCON 1.2; (0,75mm <sup>2</sup> ) MCON 1.2 Receptable Contact
1103427-2	Communication Socket (HC26.Bu.4.C.5,2)
1658686-1	HDP-22 Socket Contact for communication insert
2120325-1	Tab Connector (with 2 communication units assembled)
2120330-1	Kit: Hood, Cover, Screen Clamp (metal)
2120339-1	Side Clip (metal)
2120340-1	Kit: Hood, Cover, Screen Clamp (plastic)
1245276-2	Side Clip (plastic)
1108847-1	Protection Cover
2120336-1	Protection Cover Sealing
2120337-1	Cable Seal