Single Pair Ethernet

IEC 63171-1 Type Connector Systems

Single Pair Ethernet (SPE) is compact, flexible, and perfectly lends itself to making buildings smarter and greener. SPE facilitates barrier-free communication from the sensor to the cloud with a single protocol (IP). SPE enables data as well as power transmission via Power over Data Line (PoDL) with transmission speeds of up to 1000Base-T1 over one pair of copper wires.

Features

- Space-saving, light weight design reduces complexity and provides extended reach over traditional 4 pair wiring systems
- Shielded design for improved EMC performance
- Optional light pipe available for port status indicator when used in combination with PCB mount LED
- Additional cable legnths available upon request

Specifications

- Supports 1000Base-T1, 100Base-T1, 10Base-T1L, 10Base-T1S
- Complies with IEC 63171 and IEC 63171-1 component standard for SPE connectivity
- Tape and reel packaging

Applications

- Digital Building
- Building Automation
- Digital Ceiling
- Ethernet Switches
- Intelligent lighting
- HVAC controls
- Security Systems
- Temperature and light sensors
- Access controllers

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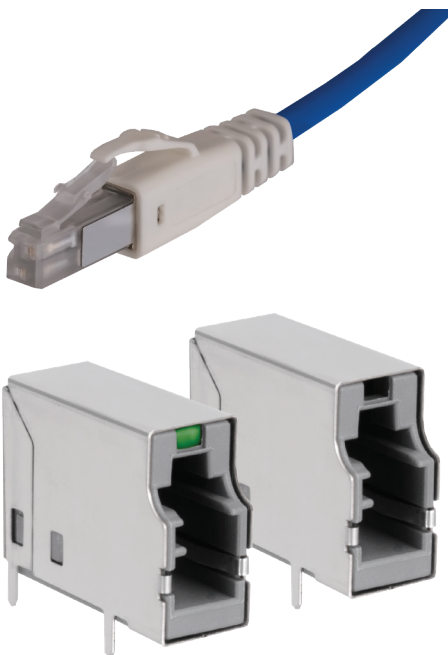
Single Pair Ethernet

IEC 63171-1 PCB Jacks

Stewart Connector

SPE PCB jacks are used as fixed connecting hardware for PCBs. They are suitable for delivery of Power over Data Line (PoDL) or SPE Power over Ethernet (SpoE) up to the highest levels (Class 15). The jacks support high data rate applications and frequencies of up to 600MHz.

Material

Jack Housing	UL 94-V0 plastic PBT-GF10, gray
Contacts	30 µ" gold plated
Shielding	Bronze (CuSn6), 3 µm tin surface plating
Compliant	Halogen free and ROHS III

Environmental

Operating Temperature	0° C to +50° C
Humidity	< 95% (non-condensing)
Installation	0° C to +50° C

Electrical (IEC 63171 Standard)

Electrical Value Range	Level 1
Transmission	Category B

Mechanical

Characteristics	MPL750
Interface Dimensions	IEC 63171-1
Tolerances	IEC 63171-1

Single Pair Ethernet Jack, LC Simplex with Light Pipe

| Part Number	Interface	Ports	Contacts	Orientation	Shielding	Shield Type	Light Pipe	Port Opening
SS-69000-001	IEC 63171-1	1	2	Horizontal	Yes	NF	Yes	Tab Up
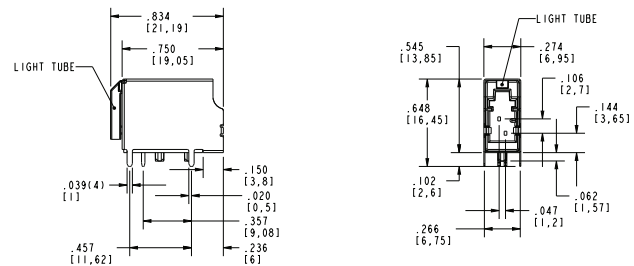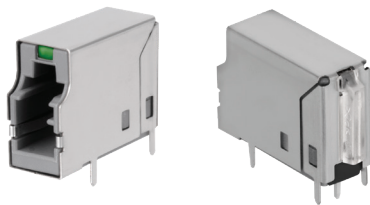
Single Pair Ethernet Jack, LC Simplex without Light Pipe

Part Number	Interface	Ports	Contacts	Orientation	Shielding	Shield Type	Light Pipe	Port Opening
SS-69000-002	IEC 63171-1	1	2	Horizontal	Yes	NF	No	Tab Up

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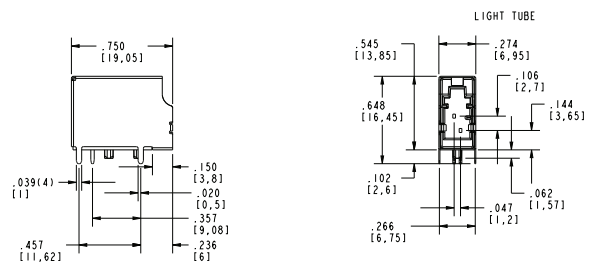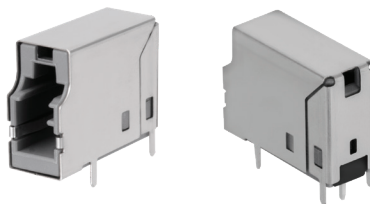
Single Pair Ethernet

IEC-63171-1 Cable Assemblies

Stewart Connector

SPE can connect devices over distances of several hundred meters. Thanks to long transmission distances and small cable diameters, connections with SPE cables can significantly simplify cabling structures in building automation environments, reduce the complexity and need for cable traces, and reduce the possible fire load.

Material

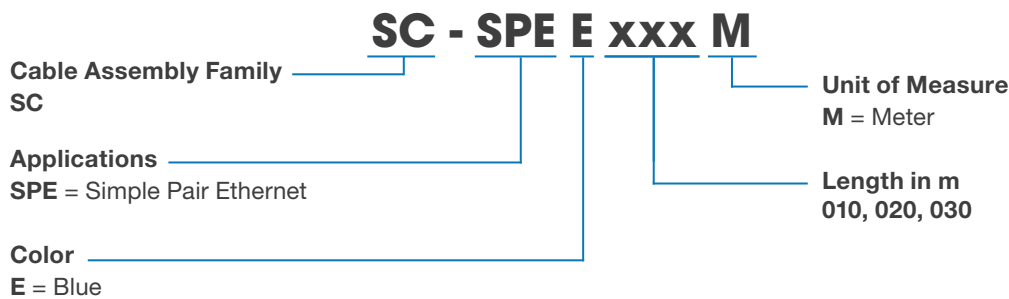|	
Plug Housing	PC, UL 94-V0, transparent
Wire	PC, UL 94-HB, gray
Anti-kink boot	PP, UL 94-HB, white
Shielding	Bronze (CuSn6), 3 µm tin surface plating
Signal Contact	Interface area: Bronze (CuSn6), 0,7 µm gold plated over nickel
	IDC area: Bronze (CuSn6), 3 µm tin plated over nickel
Compliant	Halogen free and ROHS III

Environmental

Operating Temperature	-20° C to +60° C
Humidity	< 95% (non-condensing)
Installation	0° C to +50° C

Electrical (IEC 63171 Standard)

Electrical Value Range	Level 1
Transmission	Category B

Mechanical

Characteristics	MPL750, IEC 63171
Interface Dimensions	IEC 63171-1
Tolerances	IEC 63171-1

SC - SPE E xxx M

Cable Assembly Family
SC

Applications
SPE = Simple Pair Ethernet

Color
E = Blue

Unit of Measure
M = Meter

Length in m
010, 020, 030

Single Pair Ethernet Cable Assemblies

Part Number	Connector End A	Connector End B	Length	Cable Color	Cable Type
SC-SPEE010M	IEC 63171-1	IEC 63171-1	1 M	Blue	PVC
SC-SPEE020M	IEC 63171-1	IEC 63171-1	2 M	Blue	PVC
SC-SPEE030M	IEC 63171-1	IEC 63171-1	3 M	Blue	PVC
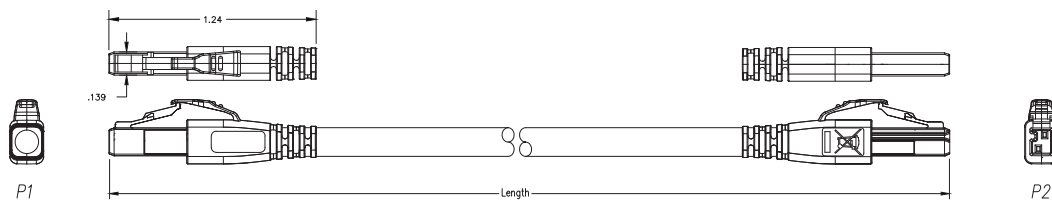
Note: Each cable assembly is bagged individually, assembled strain relief color to match jacket color. Cable construction: 26 AWG 7/34 stranded, 1Pr, F/UTP, type CM

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