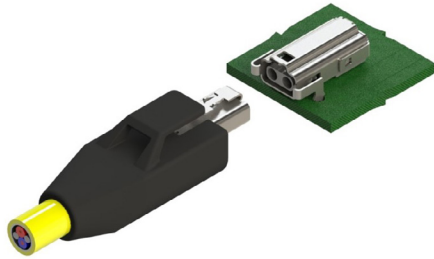


SINGLE-PAIR ETHERNET (SPE) CONNECTOR

SPE T1 Industrial Jack & Cable IP20: 6780-000



As the Industrial Ethernet market continues to grow, the market keeps looking for smaller and faster connectors to fit their needs. As a result, Single Pair Ethernet has been driven to the forefront of discussion. Single Pair Ethernet (SPE) describes the transmission of Ethernet over only one pair of twisted copper wires. In addition to data transmission via Ethernet, SPE also enables a simultaneous power supply of terminal devices via PoDL – Power over Data Line. Previously, this required two pairs for Fast Ethernet (100MB) and four pairs for Gigabit Ethernet. In addition to space and weight savings with less wire, SPE transmits 1 GBit/s up to a distance of 40 meters. KYOCERA AVX is a part of the SPE Industrial Partner Network and will offer SPE products to meet the customer and market needs while meeting the standards according to IEC 63171-6 and IEEE 802.3 etc.

As a member of the SPE Industrial Partner Network, KYOCERA AVX will be actively involved in the continuing development of single-pair Ethernet (SPE) standards and compatible connectivity products, and will also serve as an ambassador of the significant space- and weight-saving advantages that SPE offers for applications including industrial, process, and building automation systems, smart city networks, and transportation systems.

APPLICATIONS

- Robotics
- Automation
- Sensor & actuator networks
- Control & monitoring cameras
- Smart grid
- Traffic control
- Transportation Smart Monitoring

FEATURES AND BENEFITS

- Improved performance over one single twisted pair of wires
- Simplified networks, eliminated gateways
- Industry standard acc. IEC 63171-6
- Transmission speeds from 10Mbit/s to 1Gbit/s
- Transmission ranges up to 1000 meters
- Reliable cold welded KYOCERA AVX IDC technology for signal wires for simple assembly process and easier automation of cabling process
- SMT solder tails for signal wires connection to the PCB

ELECTRICAL

- Current rating: 4A @60°C
- Voltage rating: 60V DC
- Voltage proof: 1000V DC (contact to contact) & 2250V DC (contact to shield)

ENVIRONMENTAL

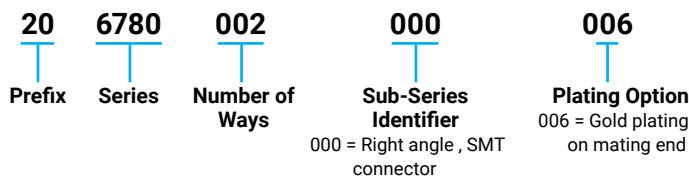
- Operating temperature: -40°C to +85°C
- Storage temperature: -40°C to +70°C
- IP degree protection: IP20

MECHANICAL

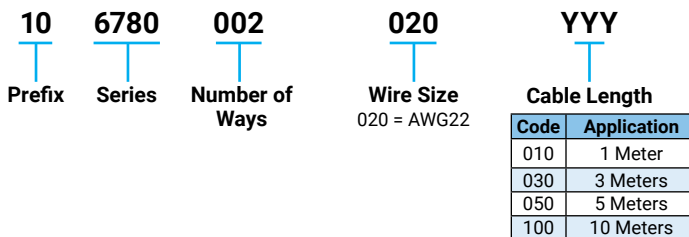
- Mating force: 20N max
- Durability: 1000 cycles / MPL1000
- Polarization force: 50N min
- Pull out force: 50N min

SPE IP20 Product performances comply with IEC 63171-6 requirements

HOW TO ORDER – SPE T1 INDUSTRIAL JACK IP20



HOW TO ORDER – SPE T1 INDUSTRIAL CABLE ASSEMBLY IP20



Other length available upon request



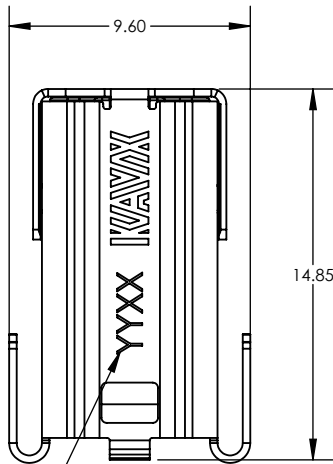
SINGLE-PAIR ETHERNET (SPE) CONNECTOR

IP20 Jack: 6780-000



20-6780-002-000-006

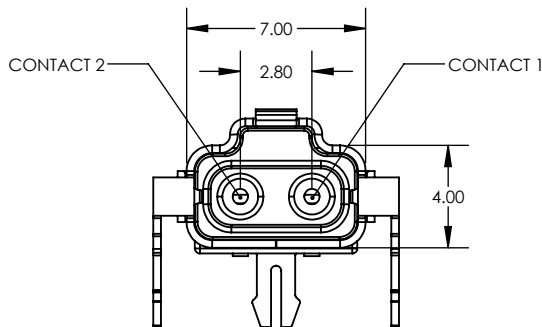
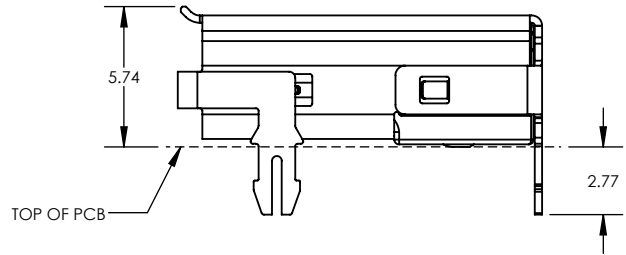
SPE T1 INDUSTRIAL JACK IP20, RIGHT ANGLE (STYLE 2J-L PER IEC 63171-6)



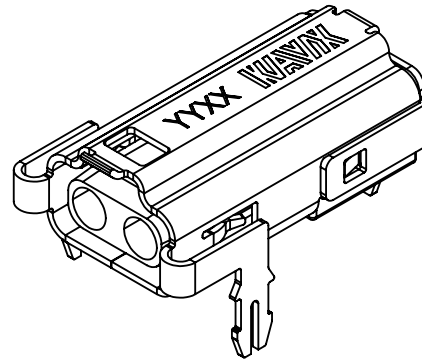
ASSEMBLY DATE CODE
YY = YEAR
XX = CALENDAR WEEK

NOTES

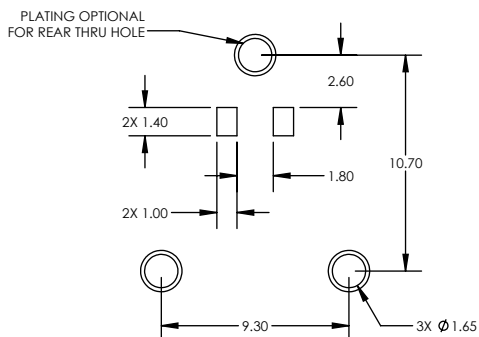
- DESIGNED IN ACCORDANCE WITH IEC 63171-6.
 - MPL1000
 - COMPATIBLE WITH 10BASE-T1, 100BASE-T1, AND 1000BASE-T1
- MATERIALS:
 - CONTACTS: COPPER ALLOY WITH NICKEL UNDERPLATE OVER ALL, GOLD PLATING ON MATING END, TIN PLATING ON PCB END.
 - EMI SHIELD: STAINLESS STEEL WITH NICKEL PLATING OVER ALL.
 - HOUSING: ENGINEERED THERMOPLASTIC, UL94V-0 FLAMMABILITY RATING, COLOR: BLACK
- OPERATING TEMPERATURE: -40°C TO +85°C.
- ELECTRICAL CHARACTERISTICS:
 - VOLTAGE RATING: $\leq 60\text{VDC}$
 - CURRENT-CARRYING CAPACITY: 4A



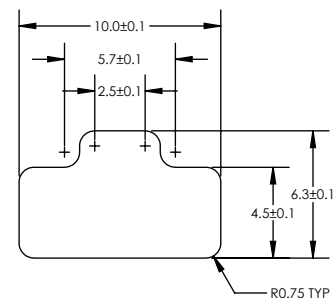
Contact No.	Signal
1	BL_DA +
2	BL_DA -



RECOMMENDED PCB LAYOUT



RECOMMENDED PANEL CUTOUT



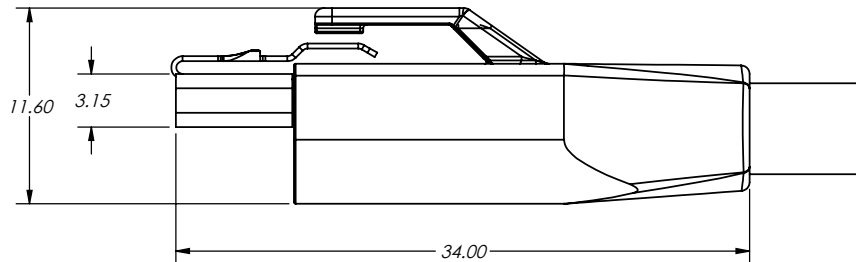
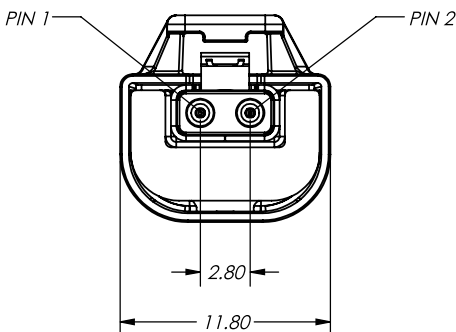
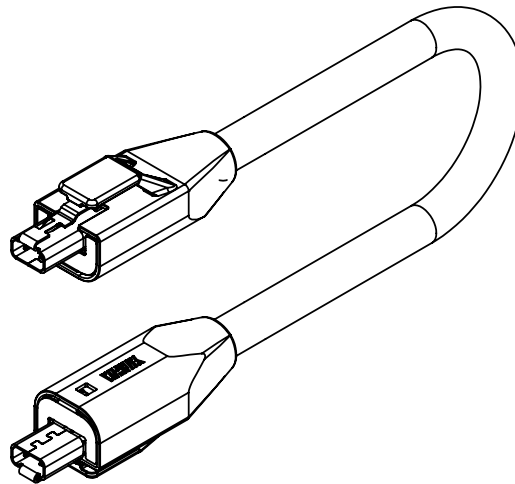
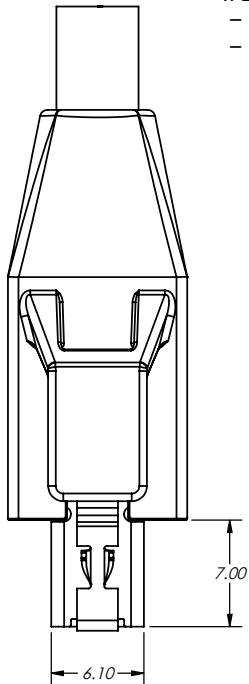
SINGLE-PAIR ETHERNET (SPE) CONNECTOR

IP20 Jack: 6780-020

10-6780-002-020-XXX SPE T1 INDUSTRIAL CABLE ASSEMBLY IP20 (STYLE 2P-L PER IEC 63171-6)

NOTES

1. DESIGNED IN ACCORDANCE WITH IEC 63171-6
 - MPL1000
 - COMPATIBLE WITH 10BASE-T1, 100BASE-T1, AND 1000BASE-T1
2. MATERIALS:
 - CONTACTS: COPPER ALLOY WITH NICKEL UNDERPLATE OVER ALL, GOLD PLATING ON MATING END.
 - EMI SHIELDS: STAINLESS STEEL WITH NICKEL PLATING OVER ALL.
 - HOUSINGS: ENGINEERED THERMOPLASTIC, UL94V-0 FLAMMABILITY RATING,
 - COLOR: BLACK.
 - CABLE: 22 AWG STRANDED
3. OPERATING TEMPERATURE: -40°C TO +80°C.
4. ELECTRICAL CHARACTERISTICS:
 - VOLTAGE RATING: $\leq 60\text{VDC}$
 - CURRENT-CARRYING CAPACITY: 4A



Pin No.	Signal
1	BI_DA +
2	BI_DA -