# Table of contents

A Philosophy That Puts Customers First .................................................. 1
Structured Cabling ............................................................................. 3
Work Area .......................................................................................... 5
Telecommunications Room ................................................................. 7
Equipment Room ................................................................................. 9
Entrance Facility .................................................................................. 11
Data Center .......................................................................................... 13
Industries ............................................................................................. 14
Wirewerks Structured Cabling Systems .............................................. 16
CAT5e solution ................................................................................... 18
CAT6 solution ..................................................................................... 19
Warranties ............................................................................................ 20

**Products**
- Keywerks Modular Connectors (Jacks) .......................................... 22
- Keywerks Audio / Video Connectors .............................................. 24
- Keywerks Fiber Optic Adapters ....................................................... 27
- Standard Faceplates ........................................................................ 29
- Standard Faceplates with Identification Windows ....................... 30
- Stainless Steel Faceplates ............................................................... 31
- Decora Style Faceplates & Bezels .................................................... 32
- Surface Mount & Back Boxes ............................................................ 33
- Keywerks Wall Mount Patch Panels .............................................. 34
- Keywerks Rack Mount Patch Panels .............................................. 35
- 110-Type Rack Mount Patch Panels ............................................. 36
- 110-Type Wall Mount Patch Panels ............................................... 37
- CAT5e & CAT6 CMR Patch Cords ................................................. 38
- CAT5e & CAT6 CMR Pigtails ........................................................... 39
- CAT5e & CAT6 CM Patch Cords and Cross-overs ....................... 40

**Tools**
- In-House Copper Factory ................................................................. 41
- In-House Fiber Optic Factory ........................................................... 42
- Fiber Optic Products ........................................................................ 43

**FAQ** ................................................................................................. 44

**Glossary** .......................................................................................... 45
A Philosophy

Jais Cohen, President
François-Charles Laberge, Vice-president of Engineering & OEM Projects
Since its foundation in 1991, Wirewerks has constantly striven to be a leader in the telecommunications connectivity market. At a time when the most prominent weakness of manufacturers was delivery lead times, our first competitive advantage was our ability to deliver standard fiber optic patch cords and assemblies within 24–48 hours through an inventory strategy that was significantly more aggressive than that of the competition.

Over the years, we have progressively expanded our product portfolio to encompass metal connectivity management, copper connectivity products, and media-conversion devices.

Now in 2011, Wirewerks is one of the leading connectivity product manufacturers in Canada and gaining significant traction in the US market quarter after quarter. Although we still provide customers with individual products, we also offer complete end-to-end solutions and have partnered with some of the biggest cable manufacturers in North America. These partnerships are a testament both to our unconditional dedication to bring to market reliable products and solutions, accomplished customer service, and prompt delivery, and to our ability to conceptualize, engineer, and manufacture solutions and products tailored to your specific needs.

Our customers’ loyalty, their unswerving confidence in Wirewerks, and the strong business relationships that they have developed with our team of customer service personnel, sales representatives, and engineers, constitute the foundation of our tremendous success.

Satisfying the needs of our customers is our number one priority and the cornerstone of our corporate philosophy and mission.

With the fruits of our success, not only have we reinvested in our company to help you keep your competitive edge, but we have also invested in North American communities to encourage youth activities, social support organizations, and environmental initiatives.

We hope you will enjoy the new, dynamic format of our Keywerks catalogue. We have added new sections, such as educational material, a glossary, implementation tips, reference information, and warranties, among many others. Equally, we have improved our product section to facilitate the reading of specifications and ordering information.

We look forward to continue to assist you in your projects and to help the industry build an even more dependable connectivity infrastructure for the future.
Being in a Commercial, Enterprise or Industrial network, nothing is more annoying than going through dozens of hardware and software checks only to find that the problem is a bad wire, patch panel or outlet connection. Observers and analysts say 7 times out of 10 a downed network link is the result of a bad patch cable, faulty wall jack, or other outlet connection\(^1\).

In all applications, besides selecting an installer with experience and good reputation, the quality of cabling and connectivity hardware you will choose is paramount to a healthy Network Infrastructure and Wirewerks structured cabling systems will bring you peace of mind on that front.

The choice you make today will determine the integrity and sustainability of your infrastructure tomorrow!

From LANs and IP updates to voice and video technology, your network needs that one driving force that keeps it modern and connected, from top to bottom. For businesses in nearly every industry, structured cabling systems are that driving force.

A structured cabling system is the hierarchical wiring network that carries all your data, voice, multimedia, security, VoIP, PoE, and even wireless connections throughout your building or campus. It includes everything from the datacenter to the desktop, including cabling, connecting hardware, equipment, telecommunications rooms, cable pathways, work areas, and even the jacks on the wall plate in your office.

The following are the six elements forming a structured cabling system:

**Work Area.**
The work area consists of all the components between the telecommunications outlet and the user’s workstation equipment.

**Horizontal Cabling.**
The horizontal cabling system encompasses everything between the telecommunications room cross-connects to the telecommunications outlets in the work area. It’s called horizontal because the cable typically runs horizontally above the ceiling or below the floor from the telecommunications room, which is usually on the same floor.

**Telecommunications Room.**
The telecommunications room holds the termination equipment needed to connect the horizontal wiring to the backbone wiring. A building must contain at least one telecommunications room, and it should be on the floor it serves.

**Backbone Cabling (riser).**
The backbone system encompasses all the cabling between telecommunications rooms, equipment rooms, entrance facilities, and between buildings.

**Equipment Room.**
The equipment room houses telecommunications systems, such as PBXs, servers, and the mechanical terminations. It’s different than the telecommunications room because of the complexity of the components. An equipment room may take the place of a telecommunications room or it may be separate.

**Entrance Facility.**
The entrance facility is the point where the outdoor cable connects with the building’s backbone cabling. This is usually the demarcation point between the service provider and the customer-owned systems.
The work area is the point at which your network interacts with people on a floor. The horizontal cabling distribution enables this interaction between the workstation and the telecommunications room. There are three horizontal distribution methods available: Consolidation Point, MUTOA, and Home Run.

**Consolidation Point Horizontal Distribution**

This method does not require you to pull a new horizontal cable from the telecommunications room to a telecommunications outlet every time a MAC (move, add, change) is required. MACs are quickly deployed, at a lower cost than if Home Run method were used.

The consolidation point can be situated in a lockable enclosure, a suspended ceiling, or a raised floor.

**MUTOA Horizontal Distribution**

The MUTOA (Multi User Telecommunications Outlet Assembly) method is an alternative to the Consolidation Point method for customers frequently reconfiguring workstations. It provides easy access to customers and makes work area changes as simple as plugging an equipment cord into an outlet.

The MUTOA cannot be placed in a plenum space, including a suspended ceiling or a raised floor.

**Home Run Horizontal Distribution**

This method involves multiple horizontal cable runs directly from the telecommunications room to each telecommunications outlet.

This method is appropriate for small offices that do not require frequent MACs.
**Recommendations:**

**Topology:** A Star topology is preferred to distribute horizontal cabling throughout the work area. This topology allows each workstation to be individually connected to the hub or switch in the telecommunications room. If one cable ceases to carry the signal because of a defect in the cable, only the workstation connected to it will be unable to send/receive information. The other workstations in the work area will still be able to function normally.

This is in contrast to other topologies such as bus or ring, where all the workstations are connected with the same cable or to each other. In these topologies, if one cable stops carrying the signal, all the workstations connected to this cable will stop sending/receiving information.

**Consolidation Point:** The main advantage of this cabling method is that it allows for an intermediate connection point for the final part of the horizontal run to the work area outlet. In the event that furniture is moved or reconfigured, only the portion of the horizontal run from the workstation outlet to the consolidation point has to be replaced.

With this method, the horizontal limit is 90 meters, the telecommunications room and the user cords are 5 meters. The consolidation point is simply placed within the 90-meter run.

**MUTOA:** This method allows you to simply extend the length of the user cord beyond the normal 5-meter limit.

The most logical arrangement for an open office with extended user cords is to bring all the cords together at a wall or other permanent structure upon which the appropriate number of workstation outlets can be mounted.

Note that there is no workstation outlet in the normal area of the workstation. The work area outlet is in fact part of the MUTOA that serves all the nearby workstations. The extended user cord is run through the modular furniture and plugged directly into the user workstation.
The Telecommunications Room (TR) is the critical point between the work area and the Equipment Room or cross-connect, through backbone cabling (equipment room to TR) and horizontal distribution (TR to work area).

The TR houses equipment, cable terminations, and cross-connects that serve a specific office area and/or a specific floor.

The TR is typically a floor-serving room for horizontal distribution. It should be designed and equipped in compliance with ANSI/TIA-569-B.
Recommendations

The TR should be centrally located on the same floor as the work area served. In a large building, more than one TR may be necessary to keep horizontal cabling runs within the required maximum length. All TRs must be vertically stacked within multi-floor buildings.

The TR should be sized at a minimum of 100 square feet. If additional equipment, such as coaxial amplifiers and splitters, are to be housed in the TR, then additional floor and wall space should be added according to the space requirements of that equipment and of associated cabling and mechanical requirements.

Note: A cross-connect is the connection between horizontal cabling and backbone or equipment hardware. Connections made directly between equipment and the horizontal cable are called interconnects.

<table>
<thead>
<tr>
<th>Floor Space</th>
<th>TR Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>m²</td>
<td>ft²</td>
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<tr>
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<td>800</td>
<td>8,000</td>
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<tr>
<td>500</td>
<td>5,000</td>
</tr>
</tbody>
</table>

Table 1 - Recommended Telecommunications Room size in relation to Work Area floor space to serve.
The equipment room contains the main distribution frame (the main location for backbone cabling), phone systems, power protection, uninterruptable power supplies (UPS), LAN equipment (such as bridges, routers, core switches, and hubs), and any file servers and data processing equipment, including the mechanical terminations.

An equipment room is seen as distinct from a telecommunications room because it is considered to be a building or campus-serving facility (as opposed to floor-serving), and because of the nature or complexity of the equipment that it contains. An equipment room may take the place of a telecommunications room, or it may exist separately. It can also function as the entrance facility. The equipment room is specified in the TIA/EIA-569-B.
Size Recommendations

The equipment room should be sized to accommodate the known requirements of specific equipment; this information can be obtained from the equipment provider. Sizing should include both present requirements as well as projected future requirements.

When designing the equipment room floor space, allowance should be made for non-uniform occupancy throughout the building.

Standard industry practice is to provide 0.07 m² (0.75 ft²) of equipment room space for every 10 m² (100 ft²) of floor space. The equipment room should be designed to a minimum of 14 m² (150 ft²).

Guidelines for Other Equipment

Environmental control equipment, such as power distribution or conditioner systems and a UPS up to 100 kVA, can be installed in the equipment room. A UPS larger than 100 kVA, however, should be located in a separate room. Equipment not related to the support of the equipment room (e.g., piping, ductwork, or pneumatic tubing) must not be installed in, pass through, or enter the equipment room.

Note: The equipment room can also be called either the main distribution frame or the main cross-connect.
The entrance facility consists of the telecommunications service entrance to the building and the backbone pathways between buildings.

The entrance facility is the point at which the outdoor plant cable connects with the building's backbone cabling. This is usually the demarcation point between the third-party service provider and the customer's proprietary systems. Design recommendations are in the TIA/EIA-569-B, which covers cables, connecting hardware, and protection devices.

The entrance facility may also house the backbone links to other buildings in a campus. Public network interface equipment and telecommunications equipment may also be in the entrance facility. The location should be dry, and near the vertical backbone pathways. The entrance facility should be provisioned as is the telecommunications room, for considerations such as environment, HVAC, lighting, doors, and electrical power.
The entrance facility is used to provide termination points for Telco trunks and/or campus distribution cables. This area is typically located on the lowest floor of a building; it can be a separate closet or co-located in the equipment room. It houses protectors, splices, and binding posts (network interfaces). It is often referred to as the minimum point of entry (MPOE) for the Telco facilities.

The entrance facility is the point at which a private installation company is provided access to services. It is critical to understand the Telco vocabulary to successfully install a facility cable distribution plant. The cable from the Telco is fed into the facility on outside plant cable (OSP) and is terminated in a splice case. Per the National Electric Code, the OSP may penetrate the building only to a maximum of 50 feet. At the splice case the cable is converted to inside plant distribution cable (ISP), and the splicing is typically completed by the Telco. The ISP cable is then fed over and terminated on protectors.
The main purpose of a data center is running the applications that handle the core business and operational data of an organization. They are used for the storage, management, and dissemination of data and information.

Maintaining its functions’ efficiency is critical to an organization to conduct business. However sophisticated is the data center, even Tier IV with all their redundancy, advanced power and cooling measures, they are worth nothing if the cable, cable management and connectivity are inferior and lead to network downtime.
Recommendation: A Structured Approach

The structured approach to cabling involves designing cable runs and connections to facilitate identifying cables, troubleshooting, and planning for future changes. In contrast, spontaneous or reactive deployment of cables to suit immediate needs often makes it difficult to diagnose problems and to verify proper connectivity.

Using a structured approach means establishing a Main Distribution Area (MDA), one or several Horizontal Distribution Area (HDA), and 2-post racks for better access and cable management. The Keywerks components selected for building the MDA and the HDA will be able to handle anticipated and future loads, as this area will house the bulk of the cabling (including horizontal and vertical management in the layout). The MDA will house the main cross-connects as well as the core networking equipment. The HDA will house the cross-connects for distributing cables to the Equipment Distribution Area (EDA). Patch cables will be used to connect equipment such as servers and storage using patch panels at their designated EDA.

Plan the layout of the equipment racks within the data center. Cables will be distributed from the HDA to the EDA using horizontal cabling. Dynamic data center environments call for a great deal of flexibility in connectivity, and the objective is to implement a cabling system with copper and optical fiber media. Keywerks copper connectivity and Wirewerks fiber connectivity will make you reach this objective by being capable of transmitting Ethernet, Fiber Channel, and any other protocols specific for the environment. Ensure that you address both current and future port counts and applications needs.
Education

Today’s educational environment demands a powerful network infrastructure capable of supporting the ever-increasing deployment of campus Wi-Fi, video conferencing, and online learning, in addition to easy access to information, administration, security, and other bandwidth-intensive applications required to more efficiently meet the needs of students and educators.

Wirewerks offers educational institutions the connectivity infrastructure they need to support new educational systems that are indispensable for providing our youth with superior learning opportunities.

Government

Whether federal, state/provincial, or municipal, all levels of government face and must address the realities of an increasing demand for services from their constituents, and the requirement of decision makers to real-time access to data shared between various departments. Government bodies must also contend with mounting security concerns, energy-efficiency objectives, and stringent budgetary control.

Protecting computer systems, networks, and sensitive data, and permitting proficient video streaming, electronic governmental services, and Web-enabled multimedia all necessitate a solid cabling infrastructure to sustain high-bandwidth applications.

Wirewerks offers comprehensive structured cabling, tactical assemblies, and other connectivity solutions tailored to the needs and specifications of government.

Business and Retail

Although business and retail face different challenges, both compete in a hyper-competitive environment, and both look to structured cabling to improve control, management, monitoring, and efficiency by connecting various discrete systems in a single network. This common infrastructure must support security, lighting, communications, inventory control, administration, HVAC, and other systems that typically have been managed separately.

Implementing a structured cabling in these organizations increases both profitability and customer satisfaction. Wirewerks’ connectivity portfolio enables these companies to accomplish these objectives with manageable and cost-efficient cabling infrastructures.
Finance
The financial sector relies on its ability to communicate information, which is integral to implementing its specialized financial services. Banks, insurance or credit card companies, brokerage firms, and other financial organizations all require efficient, reliable, state-of-the-art telecommunications to handle a rapidly growing number of tasks. This exacting environment requires a solid cabling infrastructure to support and manage all data, video, and multimedia applications.

Wirewerks provides the financial community with the cabling solution it needs to service both client and internal needs securely, quickly, and dependably.

Hospitality and Travel
For airlines, cruise operators, hotels, car rental agencies, travel planners, resorts, and other enterprises doing business in the hospitality sector, operations are complex and highly challenging.

Intricate, rapidly changing schedules and pricing structures are most effectively managed with powerful servers operating with a reliable cabling infrastructure offering fast and reliable network connection. The hospitality sector needs affordable and extensive bandwidth to support websites and reservation operations, and to interconnect geographically dispersed offices and properties.

Wirewerks supplies highly reliable cabling, giving travel and hospitality the resources and flexibility they need to grow their businesses.

Health Care
With telecommunications systems directly impacting the lives of patients, health care telecommunications capabilities are literally a matter of life and death. A solid cabling infrastructure is essential to sustain the quality of service health care must provide.

In addition to maintaining efficient administrative operations, paging systems, biomedical equipment, emerging telemedicine technologies such as virtual consultations, medical imaging transmission, and even remote surgery, today’s health care organizations expect 100% uptime, and seamless, secure, and real-time access to information. Efficient telecommunications through a reliable cabling infrastructure is one of the primary concerns in this sector.

Wirewerks’ product portfolio supports establishments seeking to balance costs with a robust offering that will fully support their goals to improve patient care through secure, reliable and cost-effective telecommunications.
Wirewerks structured cabling systems are end-to-end solutions that provide a cost-effective, high-value alternative to other guaranteed solutions. Our systems consist of the Keywerks copper connectivity solution and a fiber optic connectivity solution in combination with high-performance cables from approved manufacturers.

The objective of these structured cabling systems is to offer the best value proposition possible, a refreshing and more dynamic alternative to the solutions of other companies.

**Quality**

Our base products are manufactured to the highest quality standards and submitted to stringent testing processes, both internally and by trusted, independent laboratories such as UL (Underwriters Laboratories) and Intertek (ETL).

**Service**

Our products and systems are supported by our in-house engineering team, our savvy technical support, a customer service department dedicated to answering your questions, and approved installers with an impeccable reputation and extensive experience.

**Availability**

A comprehensive inventory of all the products appearing in our catalogue is maintained in our Canadian facilities and at our distribution partners throughout Canada and the USA for quick delivery. Together, we can respond without delay to urgent situations that organizations sometimes encounter with their telecommunications connectivity.

**Convenience**

Wirewerks provides a single point of contact for certified installation issues and support, with on-site manufacturing of all custom cable assemblies.

**Installation Certification**

Once the installation at your site is completed, Wirewerks subjects it to a certification process that includes verification of the test results of all links installed, as well as of the cabling schematics of the site. The warranty and site certificate are given to the customer by the certified contractor and administered by Wirewerks’ certification desk.
Contractor Certification

Before becoming a certified contractor for Wirewerks systems, a contractor must go through a rigorous qualification process to ensure their abilities and resources are adequate to design, install, and verify/certify a telecommunications network. Furthermore, the contractor’s credentials are systematically verified and their certification is reviewed by Wirewerks. Contractors are certified based on the quality of their past installations rather than on meeting annual purchasing quotas.

These certification criteria allow Wirewerks’ customers to select our structured cabling systems and installation partners in complete confidence.
Wirewerks CAT5e solution is the dependable solution for your cabling infrastructure requirements. It is verified and certified to comply with ANSI/TIA-568-C.2 and ISO 11801 standards.

All components are made out of high quality materials and workmanship all complying with UL safety standards, RoHS environmental standard, as well as FCC and IEC requirements.

Our solutions and their installation are backed by 25 years warranty programs giving the peace of mind that your network will not experience down times due to its connectivity components or a faulty installation.

Keywerks CAT5e Modular Jacks (Refer to page 22)
- Wiring back protective cap enabling security during wire management.
- Universal wiring scheme for T568A and T568B IDC termination.
- Instruction manual included for easy installation.
- UL Listed for the US and Canada.
- ETL Verified.

Keywerks CAT5e Rack Mount Patch Panels (Refer to page 35)
- Designed to terminate modular jacks directly into the patch panel.
- Compliant with EIA-310-D for problem free 19” racks and cabinets installations
- Port identification at the top and bottom compliant with TIA-606-A for easy port administration.
- UL Listed for the US and Canada.
- ETL Verified.
- Rear wire management bracket to simplify cable routing.
- Instruction manual and installation hardware included.

Wirewerks CAT5e 110-Style Wall Mount Patch Panels (Refer to page 37)
- Pre-loaded with 6-port CAT5e 110-Style modules.
- Reversible module for frontal IDC termination.
- Universal wiring scheme for T568A and T568B termination.
- Port identification compliant with TIA-606-A for easy port administration.
- UL Listed for the US and Canada.
- ETL Verified.
- Instruction manual and installation hardware included.

Keywerks CAT5e CMR Patch Cords (Refer to page 38,39)
- 100% Fluke tested component.
- Ergonomic over molded strain relief boot.
- Connectors’ contacts 50U” Gold plated over 100U” Nickel.
- 24 AWG stranded bare copper conductors.
- UL Listed for the US and Canada.
- ETL Verified.

Wirewerks CAT6 solution is verified and certified ANSI/TIA-568-C.2 and ISO 11801 and exceeds the performances defined in these standards.

All components are made out of high quality materials and workmanship all complying with UL safety standards, RoHS environmental standard, as well as FCC and IEC requirements.

Our solutions and their installation are backed by 25 years warranty programs giving the peace of mind that your network will not experience down times due to its connectivity components or a faulty installation.

Keywerks CAT6 Modular Jacks (Refer to page 22)
- Wiring back protective cap enabling security during wire management.
- Universal wiring scheme for T568A and T568B IDC termination.
- Instruction manual included for easy installation.
- UL Listed for the US and Canada.
- ETL Verified.

Keywerks CAT6 Rack Mount Patch Panels (Refer to page 36)
- Pre-Loaded with 6-port CAT6 110-Style modules.
- Universal wiring scheme for T568A and T568B termination.
- Port identification windows compliant with TIA-606-A for easy port administration.
- UL Listed for the US and Canada.
- ETL Verified.
- Instruction manual and installation hardware included.
Keywerks CAT6 Rack Mount Patch Panels
(Refer to page 35)
- Designed to terminate modular jacks directly into the patch panel.
- Compliant with EIA-310-D for problem free 19” racks and cabinets installations
- Port identification at the top and bottom compliant with TIA-606-A for easy port administration.
- UL Listed for the US and Canada.
- ETL Verified.
- Rear wire management bracket to simplify cable routing.
- Instruction manual and installation hardware included.

Wirewerks CAT6 110-Style Rack Mount Patch Panels
(Refer to page 36)
- Pre-loaded with 6-port CAT6 110-Style modules.
- Universal wiring scheme for T568A and T568B termination.
- Port identification windows compliant with TIA-606-A for easy port administration.
- UL Listed for the US and Canada.
- ETL Verified.
- Instruction manual and installation hardware included.

Keywerks CAT6 Jack Independent 3rd Party Intertek (ETL) Test Results

Wirewerks CAT6 110-Style Wall Mount Patch Panels
(Refer to page 37)
- Pre-loaded with 6-port CAT6 110-Style modules.
- Reversible module for frontal IDC termination.
- Universal wiring scheme for T568A and T568B termination.
- Port identification compliant with TIA-606-A for easy port administration.
- UL Listed for the US and Canada.
- ETL Verified.
- Instruction manual and installation hardware included.

Keywerks CAT6 CMR Patch Cords
(Refer to page 38, 39)
- 100% Fluke tested component.
- Ergonomic over molded strain relief boot.
- Connectors’ contacts 50U” Gold plated over 100U” Nickel.
- 24 AWG stranded bare copper conductors.
- 23 AWG solid bare copper conductors for pigtail construction.
- UL Listed for the US and Canada.
- ETL Verified.

Keywerks CAT6 Jack Independent 3rd Party Intertek (ETL) Test Results

PASS

Wirewerks
ANSI/TIA-568-C.2, Category 6
100525615CRT-001b
Appendix A
Wirewerks offers warranty programs designed to accommodate the specific needs of our customers. These programs are pivotal to maintaining our brand value and reputation as a reliable Canadian manufacturer. We so more than provide first-class structured cabling systems… we deliver confidence.

25-Year Enterprise Warranty

This warranty covers material, workmanship, labor, permanent link, and channel performance for projects and sites. This warranty is in effect provided that the design, installation, and maintenance was conducted and completed in accordance with the ANSI/TIA-568 series and the Wirewerks installation guidelines as listed in our 25-Year Enterprise Warranty program.

25-Year Standard Warranty

This warranty automatically comes with all Wirewerks-labeled products. It guarantees the products to be free from defect in material and workmanship, provided these products have been installed and maintained in accordance with their respective installation manual, the ANSI/TIA-568 series, and the Wirewerks installation guidelines as listed in our 25-Year Standard Warranty.

*Wirewerks’ warranty programs are valid for a period of 25 years. They cover the original user only and are not transferable.
The RJ-45 Keywerks keystone modular connectors are UTP punch down jack that comply with ANSI/TIA-568-C series. The back of the module is an IDC termination interface offering 2 wiring schemes; T568A and T568B, and USOC for CAT3. The modules are compatible with all Keywerks faceplates, patch panels, surface mount boxes and from other companies with keystone profile.

### Specifications

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<tr>
<th>Spring Contact</th>
<th>Phosphorous Bronze alloy, 50U” Gold plated over Replace by 100U” Nickel</th>
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<tbody>
<tr>
<td>Plastic Materials</td>
<td>ABS UL 94v-0 thermoplastic</td>
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<td>Contact Resistance</td>
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<td>Dielectric Withstanding Voltage</td>
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<tr>
<td>Transmission Performance</td>
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### Certifications & Compliances

- **ANSI/TIA-568-C.2**: Balanced Twisted-Pair Telecommunications Cabling and Components Standards.
- **ANSI/TIA-968-A**: Technical Requirements for Connection of Terminal Equipment to the Telephone Network.
- **ISO 11801**: Generic Cabling for Customer Premises.
- **FCC part 68**: Connection of Terminal Equipment to the Public Switched Telephone Network.
- **IEC 60603-7**: Connectors for Electronic Equipment.
- **UL 94V**: Test for Flammability of Plastic Material for Parts in Devices and Appliances.
CAT3 Voice Grade
KW-CC3-45T-NN*
CAT3 6P6C Keywerks USOC, top termination
*See color code choice at the bottom of this page.

Item shown:
KW-CC3-45T-WH

CAT6
KW-CC6-45B-NN*
CAT6 RJ45 Keywerks module, back termination
*See color code choice at the bottom of this page.

Item shown:
KW-CC6-45B-BL

CAT5e
KW-C5E-45B-NN*
CAT5e RJ45 Keywerks module, back termination
*See color code choice at the bottom of this page.

Item shown:
KW-C5E-45B-BL

Replace NN by the desired color code.

Color Code Choice

Blue (BL)  Black (BK)  White (WH)  Yellow (YL)  Red (RD)  Almond (AL)  Green (GN)

Other colors available on request.
Keywerks offers an extensive variety of keystone audio/video modular connectors providing great flexibility of applications and allowing you to achieve the exact configuration to your outlets requirements. Keywerks audio/video modular connectors are compatible with all Keywerks faceplates, patch panels and surface mount boxes, and from other companies with keystone profile.

### Specifications

<table>
<thead>
<tr>
<th>Plastic Materials</th>
<th>ABS UL 94v-0 thermoplastic</th>
</tr>
</thead>
</table>

#### BNC Small Footprint

**KW-CZZ-BNS-NN**

Keywerks BNC connector coupler

*See color code choice at the bottom of this page.*

![BNC Small Footprint](image)

Item shown: KW-CZZ-BNS-WH

#### BNC Regular Footprint

**KW-CZZ-BNC-NN**

Keywerks BNC 75 Ohms connector coupler

*See color code choice at the bottom of this page.*

![BNC Regular Footprint](image)

Item shown: KW-CZZ-BNC-WH

#### F-Type 3 GHz

**KW-CZZ-FTC-NN**

Keywerks F connector coupler 3 GHz

*See color code choice at the bottom of this page.*

![F-Type 3 GHz](image)

Item shown: KW-CZZ-FTC-WH

### Color Code Choice

Replace **NN** by the desired color code.

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<th>Black</th>
</tr>
</thead>
<tbody>
<tr>
<td>WH</td>
<td>AL</td>
<td>BK</td>
</tr>
</tbody>
</table>
RCA to F-Type

KW-CZZ-RFA-NN*
Keywerks RCA to F connector
*See color code choice at the bottom of this page.

Speaker Binding Post

KW-CZZ-BPM-NN*
Keywerks speaker binding post module (supplied in pair, 1 red and 1 black)
*See color code choice at the bottom of this page.

HDMI

KW-CZZ-HDF-WH
Keywerks HDMI module female to female, white

Color Code Choice

Replace NN by the desired color code.

White WH
Almond AL
Black BK
Keywerks Audio / Video Connectors

Keywerks offers an extensive variety of keystone audio/video modular connectors providing great flexibility of applications and allowing you to achieve the exact configuration to your outlets requirements. Keywerks audio/video modular connectors are compatible with all Keywerks faceplates, patch panels and surface mount boxes, and from other companies with keystone profile.

**Specifications**

| Plastic Materials | Fire retardant plastic UL 94V-0 |

---

**RCA**

KW-CZZ-RCN*-NN**

Keywerks RCA coupler

*Replace N by the desired insulation color

- Red
- White
- Yellow
- Blue
- Green

**See color code choice at the bottom of this page.

**Blank Insert**

KW-ZZZ-BLK-NN*

Keywerks blank insert (provided in bag of 10 units)

*See color code choice at the bottom of this page.

---

**Color Code Choice**

Replace NN by the desired color code.
Keywerks offers an extensive variety of keystone fiber optic modular connectors providing great flexibility of applications and allowing you to achieve the exact configuration to your outlets requirements. Keywerks fiber optic modular connectors are compatible with all Keywerks faceplates, patch panels and surface mount boxes, and from other companies with keystone profile.

### Specifications

<table>
<thead>
<tr>
<th>Plastic Materials</th>
<th>ABS UL 94v-0 thermoplastic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Single mode: Zirconia ceramic</td>
</tr>
<tr>
<td></td>
<td>APC: Zirconia ceramic</td>
</tr>
<tr>
<td></td>
<td>Multimode: Phosphorous bronze</td>
</tr>
<tr>
<td></td>
<td>OM3: Phosphorous bronze</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sleeve Materials</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>ANSI/TIA-568-C.3</th>
<th>Optical Fiber Cabling Components Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANSI/TIA/EIA-455 series</td>
<td>Fiber Optic Test Procedure Standards</td>
</tr>
<tr>
<td>TIA/EIA-604 series</td>
<td>Fiber Optic Connector Intermateability Standards</td>
</tr>
<tr>
<td>GR-326-CORE</td>
<td>Generic Requirements for Single Mode Optical Connectors and Jumper Assemblies</td>
</tr>
<tr>
<td>UL 94V</td>
<td>Test for Flammability of Plastic Material for Parts in Devices and Appliances</td>
</tr>
</tbody>
</table>

### Certifications & Compliances

- ANSI/TIA-568-C.3
- ANSI/TIA/EIA-455 series
- TIA/EIA-604 series
- GR-326-CORE
- UL 94V

**LC**

**KW-FNN*-LCZ-NN**

Keywerks LC duplex adapter

*Replace NN by the desired mode*

| Item shown: KW-FM3-LCZ-WH |

<table>
<thead>
<tr>
<th>Single Mode</th>
<th>S1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Mode APC</td>
<td>S2</td>
</tr>
<tr>
<td>Multimode</td>
<td>M1</td>
</tr>
<tr>
<td>Multimode OM3</td>
<td>M3</td>
</tr>
</tbody>
</table>

**See color code choice at the bottom of this page.**

### Color Code Choice

Replace **NN** by the desired color code.

- White (WH)
- Almond (AL)
- Black (BK)
Keywerks Fiber Optic Adapters

**SC**

**KW-FNN*-SCZ-NN**
Keywerks SC simplex adapter

*Replace NN by the desired mode*

<table>
<thead>
<tr>
<th>Mode</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Mode</td>
<td>S1</td>
</tr>
<tr>
<td>Single Mode APC</td>
<td>S2</td>
</tr>
<tr>
<td>Multimode</td>
<td>M1</td>
</tr>
<tr>
<td>Multimode OM3</td>
<td>M3</td>
</tr>
</tbody>
</table>

**Item shown:**
KW-FM3-SCZ-WH

*See color code choice at the bottom of this page.

**ST**

**KW-FNN*-STZ-NN**
Keywerks ST simplex adapter

*Replace NN by the desired mode*

<table>
<thead>
<tr>
<th>Mode</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Mode</td>
<td>S1</td>
</tr>
<tr>
<td>Multimode</td>
<td>M1</td>
</tr>
</tbody>
</table>

**Item shown:**
KW-FM1-STZ-WH

*See color code choice at the bottom of this page.

**Color Code Choice**

Replace NN by the desired color code.

- Black (BK)
- Almond (AL)
- White (WH)
Keywerks faceplates are designed to receive any keystone modular connectors. They are available in single and double gang and can accept up to 6 and 12 modular connectors respectively. These faceplates can be installed on a standard electric box or directly onto the wall. Installation guide and hardware are included.

### Specifications

<table>
<thead>
<tr>
<th>Plastic Materials</th>
<th>ABS UL 94v-0 thermoplastic</th>
</tr>
</thead>
</table>

### Certifications & Compliances

- FCC 47 part 68
- UL 94V
- TIA/EIA-569-B
- Connection of Terminal Equipment to the Public Switched Telephone Network
- Test for Flammability of Plastic Material for Parts in Devices and Appliances
- Commercial Building Standard for Telecommunications Pathways and Spaces

### Single Gang

**WW000NNN**

Keywerks standard faceplate single gang

*Replace NNN with the desired color and port code.

**Item shown:** WW000044

<table>
<thead>
<tr>
<th>Port</th>
<th>1 Port</th>
<th>2 Port</th>
<th>3 Port</th>
<th>4 Port</th>
<th>6 Port</th>
<th>Blank</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>054</td>
<td>044</td>
<td>056</td>
<td>045</td>
<td>046</td>
<td>600</td>
</tr>
<tr>
<td>Almond</td>
<td>055</td>
<td>049</td>
<td>057</td>
<td>050</td>
<td>051</td>
<td>601</td>
</tr>
</tbody>
</table>

### Double Gang

**WW0000NNN**

Keywerks standard faceplate double gang

*Replace NNN with the desired color and port code.

**Item shown:** WW000047

<table>
<thead>
<tr>
<th>Port</th>
<th>6 Port</th>
<th>12 Port</th>
<th>Blank</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>047</td>
<td>048</td>
<td>610</td>
</tr>
<tr>
<td>Almond</td>
<td>052</td>
<td>053</td>
<td>611</td>
</tr>
</tbody>
</table>
Keywerks faceplates with identification windows are designed to receive any keystone module. They are available in single and double gang and can accept up to 6 and 12 modular connectors respectively. These faceplates can be installed on a standard electric box or directly onto the wall. The identification windows provide a quick and easy way to identify work stations. Installation guide and hardware are included.

### Specifications

<table>
<thead>
<tr>
<th>Plastic Materials</th>
<th>ABS UL 94v-0 thermoplastic</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCC 47 part 68</td>
<td>Connection of Terminal Equipment to the Public Switched Telephone Network</td>
</tr>
<tr>
<td>UL 94V</td>
<td>Test for Flammability of Plastic Material for Parts in Devices and Appliances</td>
</tr>
<tr>
<td>TIA/EIA-569-B</td>
<td>Commercial Building Standard for Telecommunications Pathways and Spaces.</td>
</tr>
</tbody>
</table>

### Certifications & Compliances

- FCC 47 part 68
- UL 94V
- TIA/EIA-569-B

### Single Gang

**WW0004NN**

Keywerks standard faceplate w/ID windows single gang

*Replace NN by the desired color and port code.*

<table>
<thead>
<tr>
<th>Color</th>
<th>1 Port</th>
<th>2 Port</th>
<th>3 Port</th>
<th>4 Port</th>
<th>6 Port</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>00</td>
<td>01</td>
<td>02</td>
<td>03</td>
<td>04</td>
</tr>
<tr>
<td>Almond</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
</tr>
</tbody>
</table>

**Item shown: WW000401**

### Double Gang

**WW0004NN**

Keywerks standard faceplate w/ID windows double gang

*Replace NN by the desired color and port code.*

<table>
<thead>
<tr>
<th>Color</th>
<th>6 Port</th>
<th>12 Port</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>05</td>
<td>06</td>
</tr>
<tr>
<td>Almond</td>
<td>15</td>
<td>16</td>
</tr>
</tbody>
</table>

**Item shown: WW000405**
Stainless Steel Faceplates

Keywerks single and double gang stainless steel faceplates are compatible with any keystone module. They are available up to 6 ports. These stainless steel faceplates offer the flexibility to be installed either on a standard electric box or directly onto the wall. Installation guide and hardware are included.

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Plastic Materials</th>
<th>ABS UL 94v-0 thermoplastic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certifications &amp; Compliances</td>
<td>FCC 47 part 68</td>
<td>Connection of Terminal Equipment to the Public Switched Telephone Network</td>
</tr>
<tr>
<td></td>
<td>UL 94V</td>
<td>Test for Flammability of Plastic Material for Parts in Devices and Appliances</td>
</tr>
<tr>
<td></td>
<td>TIA/EIA-569-B</td>
<td>Commercial Building Standard for Telecommunications Pathways and Spaces</td>
</tr>
</tbody>
</table>

**Single Gang**

**WW0002NN**

Keywerks stainless steel faceplate single gang

*Replace NN with the desired port code.*

<table>
<thead>
<tr>
<th>Port</th>
<th>1 Port</th>
<th>2 Port</th>
<th>4 Port</th>
<th>6 Port</th>
</tr>
</thead>
<tbody>
<tr>
<td>WW000221</td>
<td>20</td>
<td>21</td>
<td>22</td>
<td>23</td>
</tr>
</tbody>
</table>

**Double Gang**

**WW0002NN**

Keywerks stainless steel faceplate double gang

*Replace NN with the desired port code.*

<table>
<thead>
<tr>
<th>Port</th>
<th>4 Port</th>
<th>6 Port</th>
</tr>
</thead>
<tbody>
<tr>
<td>WW000231</td>
<td>30</td>
<td>31</td>
</tr>
</tbody>
</table>
Wirewerks’ Decora style faceplates and bezels are designed to integrate under one faceplate the multiple applications an organization needs to efficiently operate voice, data, and video where desired. They can accommodate all Keywerks modular connectors and inserts as well as any other keystone product. Installation guide and hardware are included.

### Specifications

| Plastic Materials | ABS UL 94v-0 thermoplastic |

### Certifications & Compliances

| FCC 47 part 68 | Connection of Terminal Equipment to the Public Switched Telephone Network |
| UL 94V | Test for Flammability of Plastic Material for Parts in Devices and Appliances |
| TIA/EIA-569-B | Commercial Building Standard for Telecommunications Pathways and Spaces. |

### Faceplate

**WW0002NN**

Decora style faceplate

*Replace NN with the desired color and footprint code.*

- **White**
  - Single Gang: 40
  - Double Gang: 41
  - Triple Gang: 42
  - Quad Gang: 43

- **Almond**
  - Single Gang: 50
  - Double Gang: 51
  - Triple Gang: 52
  - Quad Gang: 53

Item shown: WW000241

### Bezel

**WW0002NN**

Decora style bezel

*Replace NN with the desired color and port code.*

- **White**
  - Blank: 70
  - 1 Port: 71
  - 2 port: 72
  - 4 Port: 73
  - 6 Port: 74

- **Almond**
  - Blank: 80
  - 1 Port: 81
  - 2 port: 82
  - 4 Port: 83
  - 6 Port: 84

Item shown: WW000272
Keywerks surface mount box accommodates all Keywerks modular connectors and other keystone products. The cover is a snap-on locking system for easy wiring protection. They are made with cable entry knock-out on all sides. Installation guide and hardware are included.

**Specifications**

| Plastic Materials | ABS UL 94v-0 thermoplastic |

**Certifications & Compliances**

- FCC 47 part 68
- UL 94V
- TIA/EIA-569-B

Connection of Terminal Equipment to the Public Switched Telephone Network

Test for Flammability of Plastic Material for Parts in Devices and Appliances

Commercial Building Standard for Telecommunications Pathways and Spaces.

---

**Surface Mount Box**

**WW0000NN**

Keywerks surface mount box

*Replace NN with the desired color and port code.

<table>
<thead>
<tr>
<th>Item shown: WW000071</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>White</th>
<th>Almond</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Port 70</td>
<td>1 Port 76</td>
</tr>
<tr>
<td>2 Port 71</td>
<td>2 Port 77</td>
</tr>
<tr>
<td>4 Port 72</td>
<td>4 Port 78</td>
</tr>
<tr>
<td>6 Port 73</td>
<td>6 Port 79</td>
</tr>
</tbody>
</table>

Wirewerks back box accommodates Wirewerks single and double gang faceplates. They are designed for installation on hard wall or open office environment. They feature wire entries on all sides. Installation guide and hardware are included.

**Back Box**

**WW0001NN**

Wirewerks back box

*Replace NN with the desired color and footprint code.

<table>
<thead>
<tr>
<th>Item shown: WW000110</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>White</th>
<th>Almond</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Gang 10</td>
<td>Single Gang 11</td>
</tr>
<tr>
<td>Double Gang 13</td>
<td>Double Gang 14</td>
</tr>
</tbody>
</table>
Keywerks wall mount patch panels are designed to receive any keystone connectors/jacks in space saving and low density applications. They are provided with a 89D standard bracket for an easy wall mounting. Installation guide and hardware are included.

### Specifications

<table>
<thead>
<tr>
<th>Plastic Materials</th>
<th>ABS UL 94v-0 thermoplastic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel material</td>
<td>16 gauge cold rolled steel (CRS)</td>
</tr>
</tbody>
</table>

### Certifications & Compliances

- **ANSI/TIA-568-C.2**: Balanced Twisted-Pair Telecommunications Cabling and Components Standards
- **FCC 57 part 68**: Connection of Terminal Equipment to the Public Switched Telephone Network
- **EIA-310-D**: Requirements for Cabinets, Racks, Panels, and Associated Equipment
- **TIA-606-A**: Administration Standard for Telecommunications Infrastructure

### 12-Port Wall Mount

**WW000830**

Keywerks 12-Port wall mount empty patch panel

*Available populated on request.*
Keywerks patch panels are compatible with standard 19 in. racks and cabinets, and provide a flexible termination in many applications. These versatile panels can support all Keywerks modular connectors and inserts. They are offered empty or pre-populated with CAT5e or CAT6 black modular connectors. Installation guide and hardware are included.

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Plastic Materials</th>
<th>Panel material</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ABS UL 94v-0 thermoplastic</td>
<td>16 gauge cold rolled steel (CRS)</td>
</tr>
</tbody>
</table>

**Certifications & Compliances**

- ANSI/TIA-968-A: Technical Requirements for Connection of Terminal Equipment to the Telephone Network.
- FCC part 68: Connection of Terminal Equipment to the Public Switched Telephone Network.
- IEC 60603-7: Connectors for Electronic Equipment.
- UL 94V: Test for Flammability of Plastic Material for Parts in Devices and Appliances.

### Patch Panel Empty

**WW00004N**

Keywerks patch panel, black

*Replace N with the desired version.*

<table>
<thead>
<tr>
<th>Type</th>
<th>Ports</th>
<th>1U - 24 Port</th>
<th>2U - 48 Port</th>
</tr>
</thead>
<tbody>
<tr>
<td>WW000041</td>
<td></td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

### Patch Panel Pre-Populated

**WW0000NN**

Keywerks patch panel loaded with black modules

*Replace NN with the desired version.*

<table>
<thead>
<tr>
<th>Type</th>
<th>CATS5e</th>
<th>1U - 24 Port</th>
<th>2U - 48 Port</th>
<th>CATS5e</th>
<th>1U - 24 Port</th>
<th>2U - 48 Port</th>
<th>CAT6</th>
<th>1U - 24 Port</th>
<th>2U - 48 Port</th>
</tr>
</thead>
<tbody>
<tr>
<td>WW000027</td>
<td>22</td>
<td>22</td>
<td>27</td>
<td></td>
<td>32</td>
<td>37</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
110-Type Rack Mount Patch Panels

110-Type rack mount patch panels are compatible with standard 19 in. racks and cabinets. They are pre-loaded with 6-port CAT5e or CAT6 110-Type modules and provide flexible termination on the back using a 110 Punch-Down tool. The 110-Type 6-port module provide an easy snap-in replacement. Installation guide and hardware are included.

### Specifications

<table>
<thead>
<tr>
<th>Panel Material</th>
<th>16 gauge Cold Rolled Steel (C.R.S.), ABS UL 94v-0 thermoplastic (housing)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring Wire Material</td>
<td>Phosphorus bronze alloy plated with 50U&quot; Gold over 100U&quot; Nickel</td>
</tr>
<tr>
<td>IDC Material</td>
<td>Phosphorus bronze alloy with 100U&quot; 100% Tin alloy</td>
</tr>
<tr>
<td>IDC Wire Gauge</td>
<td>22~24 AWG</td>
</tr>
</tbody>
</table>

### Certifications & Compliances

- ANSI/TIA-568-C.2: Balanced Twisted-Pair Telecommunications Cabling and Components Standards
- FCC 47 part 68: Connection of Terminal Equipment to the Public Switched Telephone Network
- UL 94V: Test for Flammability of Plastic Material for Parts in Devices and Appliances
- EIA-310-D: Requirements for Cabinets, Racks, Panels, and Associated Equipment
- TIA-606-A: Administration Standard for Telecommunications Infrastructure

#### CAT5e 110-Type Patch Panel

**WW00080N***

CAT5e 110 patch panel rack mount, black, T568A/B

*Replace N with the desired version.

<table>
<thead>
<tr>
<th>1U - 24 Port</th>
<th>2U - 48 Port</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

#### CAT6 110-Type Patch Panel

**WW00081N***

CAT6 110 patch panel rack mount, black, T568A/B

*Replace N with the desired version.

<table>
<thead>
<tr>
<th>1U - 24 Port</th>
<th>2U - 48 Port</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>
110-Type wall mount patch panels are provided with 89D bracket for easy mounting on the wall. They are pre-loaded with 6-port CAT5e or CAT6 110-Type modules and provide flexible termination on the back using a 110 Punch-Down tool. The 110-Type 6-port module provides an easy snap-in replacement. Installation guide and hardware are included.

### Specifications

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel Material</td>
<td>ABS UL 94v-0 thermoplastic</td>
</tr>
<tr>
<td>Spring Wire Material</td>
<td>Phosphorus bronze alloy plated with 50U” Gold over 100U” Nickel</td>
</tr>
<tr>
<td>IDC Material</td>
<td>Phosphorus bronze alloy with 100U” 100% Tin alloy</td>
</tr>
<tr>
<td>IDC Wire Gauge</td>
<td>22~24 AWG</td>
</tr>
</tbody>
</table>

### Certifications & Compliances

- ANSI/TIA-568-C.2: Balanced Twisted-Pair Telecommunications Cabling and Components Standards
- FCC 47 part 68: Connection of Terminal Equipment to the Public Switched Telephone Network
- UL 94V: Test for Flammability of Plastic Material for Parts in Devices and Appliances
- EIA-310-D: Requirements for Cabinets, Racks, Panels, and Associated Equipment
- TIA-606-A: Administration Standard for Telecommunications Infrastructure

---

**CAT5e 110-Type 12-Port Wall Mount**

**WW000802**

CAT5e 110 patch panel wall mount, 12 port, black, T568A/B

**CAT6 110-Type 12-Port Wall Mount**

**WW000812**

CAT6 110 patch panel wall mount, 12 port, black, T568A/B
Keywerks CAT5e and CAT6 UTP CMR patch cords are the dependable copper connectivity products for your most stringent requirements. In addition to use the most reliable components and materials in our manufacturing process, all patch cords must go through a Quality Assurance Plan with rigorous test procedures and inspection cycles.

**Specifications**

<table>
<thead>
<tr>
<th>Contact</th>
<th>50U&quot; Gold plated over 100U&quot; Nickel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conductors</td>
<td>UTP 24 AWG Bare Copper Stranded</td>
</tr>
<tr>
<td>Plastic Materials</td>
<td>UL 94v-0 thermoplastic</td>
</tr>
<tr>
<td>Transmission Performance</td>
<td>Exceeds all ANSI/TIA-568-C.2 CAT5e/CAT6, and ISO 11801 Class D/Class E component and channel requirements</td>
</tr>
</tbody>
</table>

**Certifications & Compliances**

- ANSI/TIA-568-C.2
- FCC 47 part 68
- UL 94V
- ISO/IEC 11801

Balanced Twisted-Pair Telecommunications Cabling and Components Standards
Connection of Terminal Equipment to the Public Switched Telephone Network
Test for Flammability of Plastic Material for Parts in Devices and Appliances
Generic Cabling for Customer Premises

---

**CAT5e CMR Patch Cord**

**C540-2RNN*-ANNN**

CAT5e 4-Pair UTP 24 AWG stranded CMR T568A/B

*Replace NN with the desired color code choice.**

**Replace NNN by the desired length code choice.**

---

**CAT6 CMR Patch Cord**

**C640-2RNN*-ANNN**

CAT6 4-Pair UTP 24 AWG stranded CMR T568A/B

*Replace NN with the desired color code choice.**

**Replace NNN by the desired length code choice.**

---

**Color Code Choice**

- Blue (BL)
- White (WH)
- Grey (GY)

**Length Code Choice**

<table>
<thead>
<tr>
<th>Color Code Choice</th>
<th>Length Code Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 Feet</td>
</tr>
<tr>
<td>Other colors</td>
<td>002</td>
</tr>
</tbody>
</table>

Other colors available on request.

Other lengths available on request.
Keywerks CAT5e and CAT6 UTP CMR pigtails are the dependable copper connectivity products for your most stringent requirements. In addition to using the most reliable components and materials in our manufacturing process, all pigtails must go through a Quality Assurance Plan with rigorous test procedures and inspection cycles.

### Specifications

<table>
<thead>
<tr>
<th>Contact</th>
<th>50U&quot; Gold plated over 100U&quot; Nickel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conductors CAT5e</td>
<td>UTP 24 AWG Bare Copper Solid</td>
</tr>
<tr>
<td>Conductors CAT6</td>
<td>UTP 23 AWG Bare Copper Solid</td>
</tr>
<tr>
<td>Plastic Materials</td>
<td>UL 94v-0 thermoplastic</td>
</tr>
<tr>
<td>Transmission Performance</td>
<td>Exceeds all ANSI/TIA-568-C.2 CAT5e/CAT6, and ISO 11801 Class D/Class E component and channel requirements</td>
</tr>
</tbody>
</table>

### Certifications & Compliances

- ANSI/TIA-568-C.2
- FCC 47 part 68
- UL 94V
- ISO/IEC 11801

Balanced Twisted-Pair Telecommunications Cabling and Components Standards
FCC 47 part 68 Connection of Terminal Equipment to the Public Switched Telephone Network
Test for Flammability of Plastic Material for Parts in Devices and Appliances
Generic Cabling for Customer Premises

### CAT5e CMR Pigtails

**CAT5e 4-Pair UTP 24 AWG solid CMR pigtail T568A grey**

*C540-1RGY-CNNN*

*Replace NNN by the desired length code choice.*

### CAT6 CMR Pigtails

**CAT6 4-Pair UTP 23 AWG solid CMR pigtail T568A grey**

*C640-1RGY-CNNN*

*Replace NNN by the desired length code choice.*

**Example**

**C540-2RBL-A025**

CAT5e 4-Pair UTP 24 AWG stranded CMR T568A blue 25 feet

<table>
<thead>
<tr>
<th>Length Code Choice</th>
<th>15 Feet</th>
<th>25 Feet</th>
<th>50 Feet</th>
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<tbody>
<tr>
<td>015</td>
<td>025</td>
<td>050</td>
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</table>
# CAT5e & CAT6 CM Patch Cords

Wirewerks CAT5e and CAT6 UTP CM patch cords and cross-over are the perfect connectivity products for all your price conscious installations and projects. Their distinctive over molded boots exhibit an improved strain relief and easy-to-press releasing tab.

<table>
<thead>
<tr>
<th>Specifications</th>
<th>15U&quot; Gold plated over 100U&quot; Nickel</th>
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<tbody>
<tr>
<td>Contact</td>
<td>15U&quot; Gold plated over 100U&quot; Nickel</td>
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<tr>
<td>Conductors</td>
<td>UTP 24 AWG Copper Stranded</td>
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<tr>
<td>Plastic Materials</td>
<td>UL 94v-0 thermoplastic</td>
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<tr>
<td>Transmission Performance</td>
<td>Exceeds all ANSI/TIA-568-C.2 CAT5e/CAT6, and ISO 11801 Class D/Class E channel requirements</td>
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<tr>
<th>Certifications &amp; Compliances</th>
<th>Connection of Terminal Equipment to the Public Switched Telephone Network</th>
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<tr>
<td>FCC 47 part 68</td>
<td>Test for Flammability of Plastic Material for Parts in Devices and Appliances</td>
</tr>
<tr>
<td>UL 94V</td>
<td>Generic Cabling for Customer Premises (Channel requirements)</td>
</tr>
<tr>
<td>ISO/IEC 11801</td>
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</tr>
</tbody>
</table>

## CAT5e or CAT6 CM Patch Cord

**CAT-XX* ANN**"**-NNN***

CAT5e or CAT6 4-Pair UTP 24 AWG stranded CM

*Replace XX with the desired wiring code choice.
**Replace NN with the desired color code choice.
***Replace NNN by the desired length code choice.

<table>
<thead>
<tr>
<th>Performance Code Choice</th>
<th>Standard T568A/B</th>
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<tbody>
<tr>
<td>CAT5e</td>
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<tr>
<td>CAT6</td>
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<tr>
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<th>Yellow</th>
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<th>Red</th>
<th>Green</th>
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<tr>
<td></td>
<td>BL</td>
<td>BK</td>
<td>WH</td>
<td>GR</td>
<td>YL</td>
<td>OG</td>
<td>RD</td>
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<table>
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</tr>
</tbody>
</table>

**Examples**

**CAT-5EABL-007**

CAT5e 4-Pair UTP 24 AWG stranded CM blue 7 FT.

**CAT-5CARD-015**

CAT5e Gigabit T568B cross-over 4-Pair UTP 24 AWG stranded CM red 15 FT.
CAT5e & CAT6 CM Cross-overs

**CAT5e or CAT6 CM Cross-over**

CAT-XX*ANN**-NNN***
CAT5e or CAT6 4-Pair UTP 24 AWG stranded CM
*Replace XX with the desired wiring code choice.
**Replace NN with the desired color code choice.
***Replace NNN by the desired length code choice.

<table>
<thead>
<tr>
<th>Cross-over</th>
<th>Cross-over</th>
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<tr>
<td>Gigabit T568B</td>
<td>T568A to T568B</td>
</tr>
<tr>
<td>CAT5e 5C</td>
<td>CAT5e 5X</td>
</tr>
<tr>
<td>CAT6 6C</td>
<td>CAT6 6X</td>
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</tbody>
</table>

**Wiring Code Choice**

<table>
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<tr>
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<tbody>
<tr>
<td>Yellow YL</td>
</tr>
<tr>
<td>Red RD</td>
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</tbody>
</table>

Other colors available on request.

<table>
<thead>
<tr>
<th>Length Code Choice</th>
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<tbody>
<tr>
<td>1 FT 001</td>
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<td>3 FT 003</td>
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<td>5 FT 005</td>
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<tr>
<td>7 FT 007</td>
</tr>
<tr>
<td>10 FT 010</td>
</tr>
<tr>
<td>15 FT 015</td>
</tr>
</tbody>
</table>

Other lengths available on request.

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**Tools**

**Palm Tool**

PW000091
Keyworks palm tool for jacks termination. This ergonomic design enables to firmly and seamlessly hold a keystone jack in the palm of your hand to terminate the conductors on the IDC part of the jack. It accommodates jack with IDC’s position at 90° or 180°.

**110-Type Punch Tool**

PW000092
This punch tool is made to easily terminate 110-Type jacks and connectors. Replacement blade available.
Wirewerks manufactures custom cable and harness assemblies for the OEM market, for data and telecommunication field products, as well as for military and power applications. From a complete manufacturing service to straightforward cable connection, and from the simplest to the most complex assembly, Wirewerks is the essential partner for your prototyping and production needs. You can trust us with all your cabling jobs, including cutting and stripping, wire stamping, labelling, wire terminating, contract kitting and testing, and turnkey applications.

The following is a sample of the most common products we manufacture:

- Analog and Digital Cable Assemblies
- Audio and Video Cable Assemblies
- Electromechanical Assemblies
- Industrial Equipment Wiring Assemblies
- Electronic Assemblies and Sub-Assemblies
- Military Wire Harnesses and Cables
- Transportation Industry Wire Harnesses
- DIN and Mini-DIN Connector Assemblies
- Micro-Miniature Connector Assemblies
- Ribbon Cable Assemblies
- Fan Wiring Assemblies
- Power Distribution Cables
- Value-Added Assemblies
- Power Cord Assemblies
- Network and Communication Cables
- Ferrite Bead Cable Assemblies
- Specialized Automotive Assemblies
- Octopus Type Cable Assemblies
- Plenum Cable Assemblies
- IBM Voice Data Cabling
- Robotic Cable Assemblies
- Coil Cord Assemblies
- Black Box Applications
- Coaxial Cable assemblies
- Discrete Wire Harnesses
- Circular Connector Assemblies
Our state-of-the-art factory has the capability to build any type of fiber optic assemblies, including the integration of our customers’ manufacturing processes, components and specifications for OEM business.

Through our years of experience, we have acquired cutting-edge testing and production equipment that enables us to offer unparalleled product quality and manufacturing lead time. Beyond mere production, our fiber optic factory offers additional value-added manufacturing services, such as fiber optic harness installation and management in cassettes and patch panels.

A second major complementary advantage of our fiber optic factory is the integration of elements of our engineering department with those of the production team, guaranteeing that the conception and manufacturing of your special projects will always be achieved on time, on budget, and to your exact specifications.
Wirewerks has been operating in the fiber optic industry for 20 years, and has acquired a solid product portfolio. We offer a complete array of components, including fiber optic wall or rack mount patch panels, patch cords, node service cables, multi-fiber assemblies, attenuators, adapters, fan-out kits, TFOCA (CAGE number L6624), bend insensitive fiber assemblies, and splitters, among many other essential products. Wirewerks is the preferred destination of knowledgeable clients looking for a comprehensive choice of fiber optic products.

To learn more about our fiber and copper factories or our fiber optic products, contact your Wirewerks sales representative or visit us at www.wirewerks.com
Q: What is the difference between Keywerks patch panels and Wirewerks 110-Type patch panels?
A: Keywerks patch panels are a series of independent Keystone jack/connectors each to be terminated individually. Wirewerks 110-Type patch panels present modular blocks of 6 unified jacks with 110-type termination block at their rear.

Q: What does USOC mean, and how the connections are wired?
A: USOC’s expanded acronym is Universal Service Ordering Code. This is an old Bell system identifying a particular service or equipment offered under tariff. USOC specifies the order in which wires are connected in a 4, 6, 8 position modular connector/jack.

Q: Can Wirewerks modular connectors CAT5e run up to 350MHz?
A: The Wirewerks CAT5e modular connectors are capable to run up to 350 MHz even though there is no standard requiring to run at that level.

Q: What is the difference between the small foot print and regular foot print BNC connectors?
A: Wirewerks’ small foot print BNC connector is a 50 Ohms and is for analog video applications. Wirewerks regular foot print BNC connectors is a 75 Ohms and is for digital video applications.

Q: What is the difference between 568A and 568B wiring scheme?
A: T568A and T568B are both wiring schemes used today for terminating pairs in networks. It is important to ensure that the workstation connectors and patch panels are wired to the same pattern. There is no difference in performance between the two standards as long as the same scheme is used across the cabling system. T568A wiring scheme is widely used in Canada in contrast with the USA where the T568B is favored.

Q: What is Keystone?
A: Keystone is the term used to define the standard rectangular profile in connectors and jacks, patch panels, faceplates, surface mount boxes and other outlets that connect different parts of a network together. They are interchangeable between different Keystone product manufacturers.

Q: What is structured cabling?
A: Structured cabling is a building or campus telecommunications cabling infrastructure that consists of a number of standardized smaller elements called subsystems. These subsystems are the Work Area, Horizontal Cabling, Telecommunications Room, Backbone Cabling (Riser), Equipment Room, and Entrance Facility. A structure cabling can have a cabling infrastructure based on optical fiber, copper or a combination of both media.

Q: What is the difference between backbone and horizontal cabling?
A: A horizontal cabling extends directly from the horizontal cross-connect in the telecommunications room to the workstations.

A backbone cabling connects the telecommunications room with outside services, or connects telecommunications rooms together, or between buildings.
Administration: The method for labeling, identification, documentation and usage needed to implement moves, additions, and changes of the telecommunications infrastructure.

Backbone: A facility (e.g., pathway, cable or conductors) between telecommunications rooms, or floor distribution terminals, the entrance facilities, and the equipment rooms within or between buildings.

Bundled cable: An assembly of 2 or more cable continuously bound together to form a single unit.

Cabinet (telecommunications): An enclosure with hinged cover used for terminating telecommunications cables, wiring, and connection devices.

Cable management: Physical structures attached to and/or within cabinets and racks to provide horizontal and vertical pathways for guiding and managing cabling infrastructure.

Cable rack: Hardware designed and manufactured for horizontal pathway distribution of cable inside wiring inside the MDF, TR.

Cable run: A length of installed media which may include other components along its path.

Cabling: A combination of all cables, jumpers, cords, and connecting hardware.

Channel: The end-to-end transmission path between two points at which application-specific equipment is connected.

Computer room: An architectural space with the primary function is to accommodate data processing equipment.

Conduit: (1) A raceway of circular cross section. (2) A structure containing one or more ducts.

Connecting hardware: A device providing mechanical cable terminations.

Connectivity: Patch panels, cabling, connectors, and cable management used to create and maintain electrical and optical circuits.

Consolidation Point: A location for interconnection between horizontal cables extending from building pathways and horizontal cables extending into furniture pathways.

Cross-connect: A facility enabling the termination of cable elements and their interconnection or crossconnection.

Data center: a building or portion of a building with the primary function to house a computer room and its support area.

Demarcation point: A point where the operational control or ownership changes between carrier equipment and customer premises equipment.

Entrance facility: An entrance to a building for both public and private network service cables (including wireless), including the entrance point of the building and continuing to the entrance room or space.

Entrance point: The point of emergence for telecommunications cabling through an exterior wall, a floor, or from a conduit.

Entrance room or space: A space in which the joining of inter or intra building telecommunications backbone facilities takes place.

Equipment cable; cord: A cable or cable assembly used to connect telecommunications equipment to horizontal or backbone cabling.

Equipment distribution area: The computer room space occupied by equipment racks or cabinets.

Equipment room: An environmentally controlled centralized space for telecommunications and data processing equipment with supporting communications connectivity infrastructure.

Horizontal cabling: 1) The cabling between and including the telecommunications outlet/connector and the horizontal cross-connect. 2) The cabling between and including the building automation system outlet or the first mechanical termination of the horizontal connection point and the horizontal cross-connect.

Horizontal cross-connect: A cross-connect of horizontal cabling to other cabling.
Horizontal distribution area: A space in a computer room where a horizontal cross-connect is located, and may include LAN switches, SAN switches, and keyboard/video/mouse (KVM) switches for the end equipment located in the equipment distribution areas.

Infrastructure (telecommunications): A collection of those telecommunication components, excluding equipment, that together provide the basic support for the distribution of all information within a building or campus.

Interconnection: A connection scheme that employs connecting hardware for the direct connection of a cable to another cable without a patch cord or jumper.

Intermediate cross-connect: A cross-connect between first level and second level backbone cabling. Also referred to as the horizontal cross-connect.

Jumper: An assembly of twisted pairs without connectors, use to join telecommunications circuits/links at the cross-connect.

Link: A transmission path between two points, not including terminal equipment, work area cables, and equipment cables.

Main cross-connect: A cross-connect for first level backbone cables, entrance cables, and equipment cables.

Main distribution area: The space in a computer room where the main cross-connect is located.

Media (telecommunications): Wire, cable, or conductors used for telecommunications.

Mission critical: Any operation, activity, process, equipment, or facility that is essential to continuous operation for reason of business continuity, personnel safety, security, or emergency management.

Modular jack/connector: A female telecommunications connector that may be keyed or unkeyed and may have 6 or 8 contact positions, but not the positions need to be equipped with jack contacts.

Open office: A floor space division provided by furniture, moveable partitions, or other means instead of by building walls.

Outlet/connector (telecommunications): The fixed connector in an equipment outlet.

Patch cord: A length of cable with a plug on one or both ends.

Patch panel: A connecting hardware system that facilitates cable termination and cabling administration using patch cords.

Pathway: A facility for the placement of telecommunications cable.

Permanent link: A test configuration for a link excluding test cords and patch cords.

Plenum: A compartment or chamber that forms part of the air distribution system.

Redundancy: providing secondary components that either become instantly operational or are continuously operational so that the failure of a primary component will not results in a mission failure.

Riser cable: Communications cable that is used to implement backbones located on the same or different floor.

SAN: Storage Area Network (SAN) is a high-speed network of shared storage devices.

Star topology: A topology in which telecommunications cables are distributed from a central point.

Telecommunications: Any transmission, emission, and reception of signs, signals, writings, images, and sounds, that is information of any nature by cable, radio, optical or other electromagnetic systems.

Termination: The physical connection of a conductor to a connecting hardware.

Trunk cables: Cables bundled together to form a single unit.

Zone distribution area: A space in a computer room where a zone outlet or a consolidation point is located.