

VITALink[®]

Circuit Integrity Cables

Protecting lives one signal at a time



Dual Rated CI/CIC • Ethernet • Armored



COMTRAN
Innovative Systems. Engineered Solutions.



VITALink[®]
Circuit Integrity Cable

VITALink® AT A GLANCE

ABOUT COMTRAN

Comtran, located in Attleboro, MA, is a leading provider of specialty cable and system solutions for a variety of applications, including structured cabling, fire safety, circuit integrity, and both transit and military communications. Comtran has been a trusted source specifically in the security and fire alarm market for over 30 years. Relying on our history and experience helped us to develop the most comprehensive circuit integrity cables in the industry.

HISTORY

In 2012, Underwriter's Laboratories (UL) pulled their 2196 listing due to concerns about interactions between zinc and the approved cables. Once the new UL 2196 standard was released, Comtran redesigned VITALink® cables to meet the stringent new requirements and reintroduced the cables to the market in 2014. Since then, VITALink® has quickly grown to be the most versatile 2 hour fire resistive solution, with a product portfolio that includes dual rated CI/CIC cables, ethernet cables, and armored cables.

FEATURES AND BENEFITS

- Withstands heat up to 1850°F & ensures 2 hour signal protection
- Approved for use in the United States (free air and conduit) & Canada (in conduit only)
- Sunlight resistant & wet location rated
- No special tools or training required
- No termination kits, brass fittings, or stainless steel straps needed
- Installation requirements are outlined in Comtran's instruction guide
- All required hardware components are commercially available off-the-shelf

COMMON USES

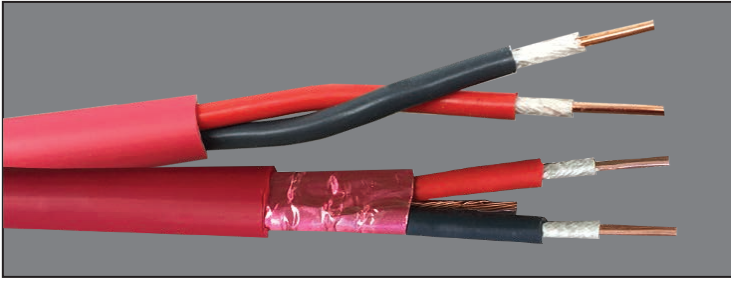
- Manufacturing, Commercial, & Industrial locations
- High-rise Buildings
- Universities & Stadiums
- Hotels & Airports
- Health Care Facilities
- Tunnels & Subways



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VITALink® CI/CIC CABLES



CONSTRUCTION

- Conductors: 18-12 AWG Solid Bare Copper and 16-12 AWG Stranded Bare Copper
- Insulation: Low Smoke, Zero Halogen Thermoset Fire-Roc™
- Cable Assembly: 2 Conductors
- Drain Wire: Stranded Bare Copper (Shielded constructions only)
- Shield: Copper/Polyester Tape (Shielded constructions only)
- Jacket: Red Non-Halogen Flame Retardant Polyolefin (Sequential footage markers every 2 feet)

PRODUCT MATRIX

Part Number	Nom. Diameter (in./mm.)	Nom. Weight (lbs./1000')	Nom. Cap. (pF/ft.)	1/2" Max. Conduit Fill*	3/4" Max. Conduit Fill	1" Max. Conduit Fill	1 1/4" Max. Conduit Fill	1 1/2" Max. Conduit Fill	2" Max. Conduit Fill
Shielded									
18/2 Solid (36397)	0.309/7.849	49	17	1 Cable	2 Cables	4 Cables	7 Cables	7 Cables	7 Cables
16/2 Solid (35785)	0.330/8.382	60	20	-	-	3 Cables	6 Cables	8 Cables	10 Cables
14/2 Solid (36316)	0.359/9.119	73	25	-	-	3 Cables	5 Cables	6 Cables	10 Cables
Unshielded									
18/2 Solid (36337)	0.305/7.747	41	17	1 Cable	2 Cables	4 Cables	7 Cables	7 Cables	7 Cables
16/2 Solid (35777)	0.321/8.153	52	19	1 Cable	2 Cables	3 Cables	6 Cables	8 Cables	10 Cables
16/2 Stranded (36341)**	0.344/8.738	54	19	1 Cable	1 Cable	3 Cables	5 Cables	7 Cables	10 Cables
14/2 Solid (36338)	0.352/8.941	61	20	1 Cable	1 Cable	3 Cables	5 Cables	7 Cables	10 Cables
14/2 Stranded (36340)**	0.368/9.347	65	20	1 Cable	1 Cable	2 Cables	4 Cables	6 Cables	10 Cables
12/2 Solid (36342)**	0.402/10.211	90	22	1 Cable	1 Cable	2 Cables	4 Cables	6 Cables	9 Cables
12/2 Stranded (36339)**	0.413/10.490	92	22	1 Cable	1 Cable	2 Cables	4 Cables	6 Cables	9 Cables

*1/2" conduit is EMT only, not IMC

**Non-stock item. Lead time and MOQ may be required.

VITALink® CI/CIC CABLES

Certifications & Standards

CERTIFIED HARDWARE (In Conduit only):

- EMT Conduit:
 - ½ inch, ¾ inch, 1 inch, 1 ¼ inch, 1 ½ inch, and 2 inch EMT Conduit
Approved manufacturers: Allied Tube & Conduit Corp. E-Z Pull® Brand, Columbia-MBF E-Z Pull® Brand, or Wheatland/Western Tube Co.
 - Steel Compression Couplings (Trade size to correspond with the raceway size)
Approved manufacturers: ABB/Thomas & Betts Corp. or RACO
 - Set Screw Couplings (Trade size to correspond with the raceway size)
Approved manufacturer: RACO
- IMC Conduit:
 - ¾ inch, 1 inch, 1 ¼ inch, 1 ½ inch, and 2 inch IMC Conduit
Approved Manufacturers: Allied Tube & Conduit Corp. or Wheatland/Western Tube Co.
 - Steel Threaded Couplings (Trade size to correspond with the raceway size)
Approved Manufacturers: Allied Tube & Conduit Corp. or Wheatland/Western Tube Co.
- Pulling Lubricant: American Polywater Type LZ
- Hubbell Wiegmann NEMA-1 Enclosure/Pull Box with steel EMT compression connectors or set screw connectors (ABB/Thomas & Betts Corp. or RACO) or steel IMC threaded or set screw connectors (RACO)
- Amtec wire mesh support grips when exceeding specified maximum vertical length
- Supports per Comtran's installation instructions
- Splicing per Comtran's splicing guide. Splice kits are available upon request.

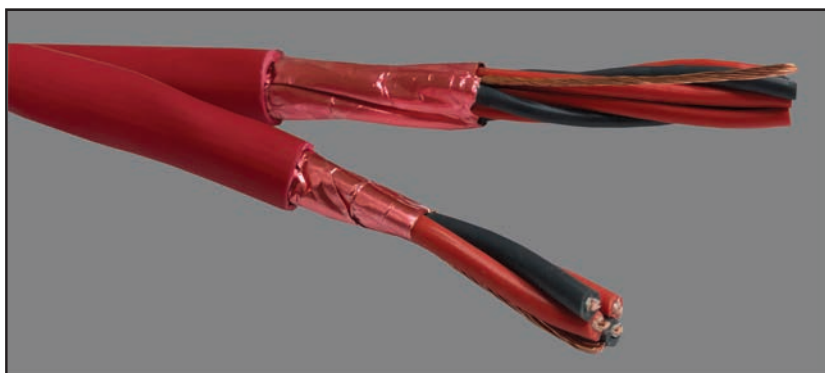
PERFORMANCE STANDARDS

- ANSI/UL 2196 2 Hour fire rating for use in FHIT System 40A (See UL Fire Directory R27557)
- CAN/ULC-S139 Certified with Hose Stream Test for use in FHIT7 System 40A
- UL Type FPLR-CI-LS, CMR-CI-LS, and CL3R-CI-LS
- CSA Listed FAS 105 ST1 FT4
- UL Subject 1424 for Power-Limited Fire Alarm Cables; 300V / 105°C
- UL Subject 13 for Power-Limited Circuit Cables; 300V / 105°C
- UL 444 Listed CMR-CI-LS for Communication Cable; 300V / 105°C
- NFPA 70, 72, 130, and 502
- Fire certified for power-limited system use at 72V phase-to-phase utilization voltage
- Sunlight Resistant
- For use in Wet Locations
- NYC Electrical Advisory Board approval #54502, April 2017
- California State Fire Marshal Approved
- RoHS Compliant

CIRCUIT INTEGRITY (CI) vs. CIRCUIT INTEGRITY IN CONDUIT (CIC)

Rated as both Circuit Integrity (CI) and Circuit Integrity in Conduit (CIC), VITALink® CI/CIC cables can be installed either with or without conduit, depending on the application and code requirements. As CI, also referred to as CI Free Air, VITALink® can be used in riser or horizontal (non-plenum) installations without conduit. The cable must be installed per the NEC code and meet all national and local code requirements. As CIC, VITALink® cable must be installed as the UL approved FHIT.40A or FHIT7.40A system and in accordance with Comtran's installation instructions. This system requires use of specific hardware including conduit, couplings, pulling lubricant, pull boxes, and supports. In areas such as plenum airspace, VITALink® must be installed in conduit.

VITALink® ETHERNET CABLES



CONSTRUCTION

- Conductors: 18 AWG Solid Bare Copper
- Tape: Flame Retardant Tape
- Insulation: Low Smoke, Zero Halogen Thermoset Fire-Roc™
- Cable Assembly: 2-4 Pairs
- Drain Wire: 18 AWG Stranded Bare Copper
- Shield: Copper Shield
- Jacket: Red Non-Halogen Flame Retardant Polyolefin (Sequential footage markers every 2 feet)
- Patent Pending

PRODUCT MATRIX

Part Number	Number of Pairs	AWG Size	Nom. Diameter (in./mm.)	Nom. Weight (lbs./1000')	3/4" Max. Conduit Fill
36512	2	18	0.465/11.811	95	1 Cable
36530	3	18	0.489/12.421	113	1 Cable
36513	4	18	0.510/12.954	126	1 Cable

VITALink® ETHERNET CABLES

Certifications & Standards

CERTIFIED HARDWARE

- EMT Conduit:
 - ¾ inch EMT Conduit
Approved Manufacturers: Allied Tube & Conduit Corp. E-Z Pull® Brand, Columbia-MBF E-Z Pull® Brand, or Wheatland/Western Tube Co.
 - Steel Compression Couplings (Trade size to correspond with the raceway size)
Approved Manufacturers: ABB/Thomas & Betts Corp. or RACO
 - Set Screw Couplings (Trade size to correspond with the raceway size)
Approved Manufacturer: RACO
- IMC Conduit: (Not for use in Canada)
 - ¾ inch IMC Conduit
Approved Manufacturers: Allied Tube & Conduit Corp. or Wheatland/Western Tube Co.
 - Steel Threaded Couplings (Trade size to correspond with the raceway size)
Approved Manufacturers: Allied Tube & Conduit Corp. or Wheatland/Western Tube Co.
- Pulling Lubricant: American Polywater Type LZ
- Hubbell Wiegmann NEMA-1 Enclosure/Pull Box with steel EMT compression connectors or set screw connectors (ABB/Thomas & Betts Corp. or RACO) or steel IMC threaded or set screw connectors (RACO)
- Amtec wire mesh support grips when exceeding specified maximum vertical length
- Supports per Comtran's installation instructions

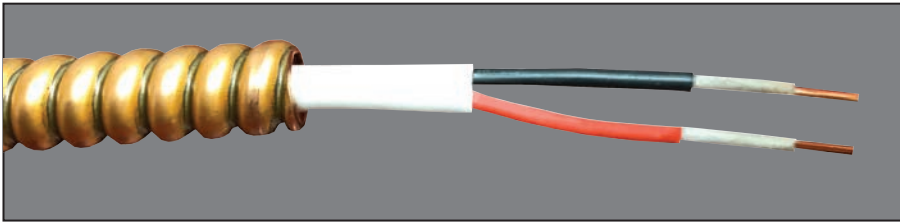
PERFORMANCE STANDARDS

- ANSI/UL 2196 2 Hour fire rating for use in FHIT System 40A (See UL Fire Directory R27557)
- CAN/ULC-S139 Certified with Hose Stream Test for use in FHIT7 System 40A
- UL Type FPLR-LS and CL3R-LS
- c(UL)us Type CMR-LS
- CSA Listed FAS 105 ST1 FT4
- UL Subject 1424 for Power-Limited Fire Alarm Cables; 300V / 105°C
- UL Subject 13 for Power-Limited Circuit Cables; 300V / 105°C
- UL Subject 444 for Communication Cable; 300V / 105°C
- NFPA 70, 72, 130, and 502
- Meets Cat 3 channel requirements
- Transmits data speeds up to 10 Mbps
- Fire certified for power-limited system use at 72V phase-to-phase utilization voltage
- Sunlight Resistant
- For use in Wet Locations
- California State Fire Marshal Approved
- RoHS Compliant



*Need a connector? Comtran recommends Calrad Electronics part # 72-RJ45-T.
Ask us about our how-to guide for additional termination and connector details.*

VITALink® ARMORED CABLES



CONSTRUCTION

- Conductors: 14 AWG Solid Bare Copper
- Tape: Heat Resistant Tape
- Insulation: Low Smoke, Zero Halogen Thermoset Fire-Roc™
- Cable Assembly: 1-4 Pairs
- Binder: White Fire-Roc™ Binder
- Armor: Continuously Corrugated Welded Copper
- Jacket (Optional): Red Non-Halogen Flame Retardant Polyolefin (Sequential footage markers every 2 feet)

PRODUCT MATRIX

Part Number	Number of Pairs (14 AWG Cond.)	Nominal Core Diameter (in./mm.)	Nominal Armor Diameter (in./mm.)	Nominal Cable Diameter over Outer Jacket (in./mm.)	Approximate Net Weight (lbs./1000 ft.)
No Overall Jacket - FPLR-LS/CL3R-LS/FAS105 ST1 FT4					
36516	1	0.334/8.484	0.620/15.748	N/A	264
36517	2	0.504/12.802	0.840/21.336	N/A	447
36518	3	0.538/13.665	0.880/22.352	N/A	506
36519	4	0.605/15.367	0.920/23.368	N/A	589
With Overall Jacket - FPLR-LS/CL3R-LS/FAS105 ST1 FT4					
36520	1	0.334/8.484	0.620/15.748	0.684/17.374	306
36521	2	0.504/12.802	0.840/21.336	0.934/23.724	532
36522	3	0.538/13.665	0.880/22.352	0.974/24.740	601
36523	4	0.605/15.367	0.920/23.368	1.024/26.100	682

VITALink® ARMORED CABLES

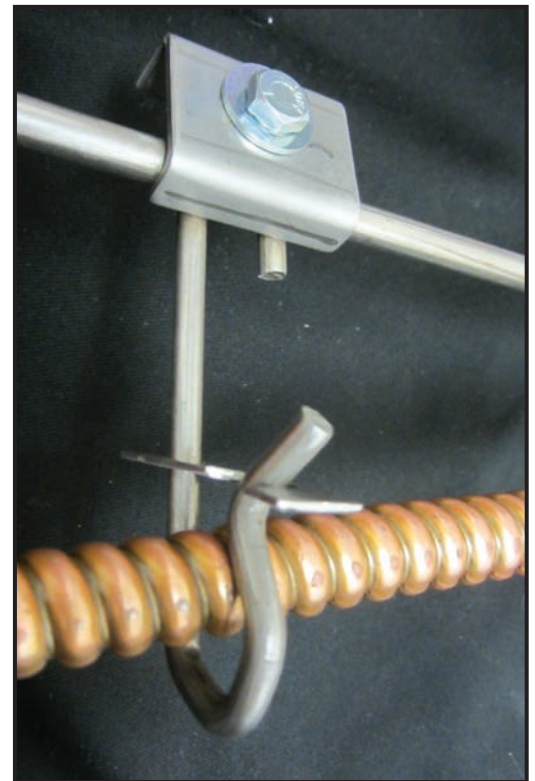
Certifications & Standards

CERTIFIED HARDWARE

- Supports: Min 12 AWG by 1 ½ inch wide or 1 5⁄8 inch wide painted or unpainted slotted steel channels with hemmed flange edges
- Clamps (For jacketed cable): Kindorf®+ J-800 series interlocking strap with Kindorf®+ J-851 locking brackets
- Clamps (For unjacketed cable): Two piece single bolt type pipe clamp or one piece saddle type pipe clamps
- Supports (For horizontal installation): Snake Tray® 505 series

PERFORMANCE STANDARDS

- ANSI/UL 2196 2 Hour fire rating for use in FHIT System 40B (See UL Fire Directory R27557)
- CAN/ULC-S139 Certified with Hose Stream for use in FHIT7 System 40B
- UL Type FPLR-LS and CL3R-LS
- CSA Listed FAS 105 ST1 FT4
- UL Subject 1424 Power-Limited Fire Alarm Circuits; 300V/105°C
- UL Subject 13 Power-Limited Circuit Cables; 300V/105°C
- NFPA 70, 72, 130, and 502
- California State Fire Marshal Approved
- RoHS Compliant

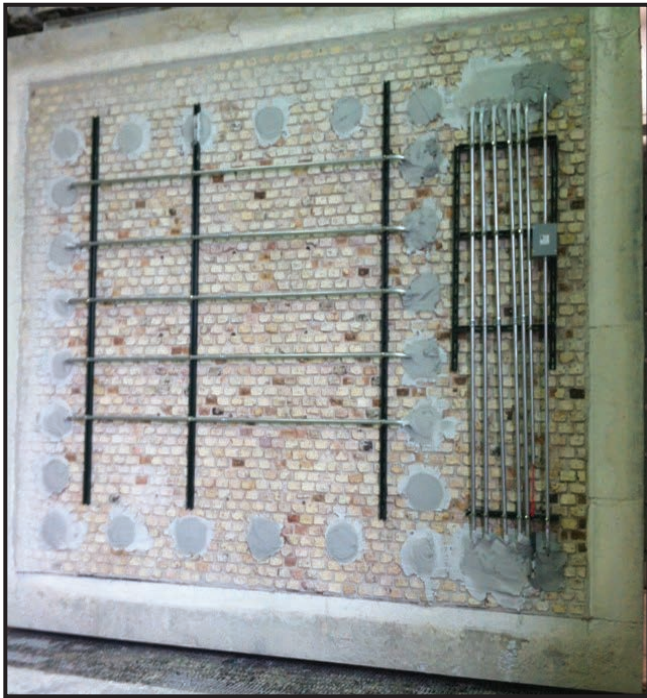


Horizontal supports for VITALink® Armored cable.

UL 2196 TESTING

UL Standard 2196 requires 5 out of 5 system tests to pass for a full 2 hours of burn time at temperatures up to 1850°F followed by a pressurized hose stream without loss of signal. Cable installed in a 90° curved conduit must pass the same testing in order to meet ULC-S139, the circuit integrity listing in Canada.

During testing, VITALink® cables are secured to a wall either in conduit or free air, depending on the listing. The cables are terminated and the wall is connected to a furnace for 2 hours, while circuits are monitored closely for leakage current. After 2 hours, the wall is removed and exposed to a pressurized hose stream before the circuits are energized again. All the circuits must work for a passing test.



Before testing in the furnace



After wall is removed from furnace



After surviving the extreme heat and hose stream during the 2 hour test, VITALink® cables continue to operate without ever losing signal.

APPLICATIONS

VITALink® CI/CIC CABLE

- Emergency Voice-Alarm Communications (EVAC)
- Smoke & Fire Alarm Systems
- Fireman's Telephone Systems
- Area of Refuge Communication Systems
- Visible Notification Appliances
- Fan/Damper Pressurization Systems
- Fuel Leak Detection Systems
- Fire Pump Feeder/Controls
- Smoke Control & Management Equipment
- Command Center Critical Systems
- Pressurized Stairway Systems

VITALink® ETHERNET CABLE

- Emergency VoIP Communications, e.g. Speakers & Telephones
- IP Area of Refuge Communication Devices
- Addressable Class N Fire Alarm Devices
- Critical Data Communication Circuits

VITALink® ARMORED CABLE

- Low voltage critical circuits located in enclosed spaces or harsh environments, such as:
 - Transit Tunnels & Platforms
 - Underground & Below Grade Structures, e.g. Parking Garages
 - Petrochemical, Nuclear, & Waste Treatment Facilities
 - Commercial Retrofits with Non-UL 2196 Approved Conduit



ADDITIONAL RESOURCES

There are many resources available to assist with the installation of VITALink® cables. Please visit Comtran's website or contact us for the following documents:

- FHIT.40A & FHIT7.40A
- FHIT.40B & FHIT7.40B
- Installation Instructions
- Splicing Guide
- Frequently Asked Questions





COMTRAN

Innovative Systems. Engineered Solutions.



VITALink[®]
Circuit Integrity Cable

ABOUT US

- Made in USA
- UL Listed
- RoHS Compliant
- ISO 9001:2015 Certified

MORE FROM COMTRAN

- COM-Link[®] Data Communications Solutions
- DEFENSE-Link[®] Military Shipboard Solutions
- HUB-Link[®] Rail Transit Solutions

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A Marmon Wire & Cable/Berkshire Hathaway Company