

VITALink[®]

Circuit Integrity Cables

Solutions for 300V & 600V Applications



Dual Rated CI/CIC • Ethernet • Coax • Armored



Marmon Industrial
Energy & Infrastructure

ABOUT VITALink®

VITALink® BRAND

VITALink® has been trusted resources in the fire and life safety market, providing high performance solutions for circuit integrity applications. Since launching in 2000, VITALink® has become the most comprehensive line of circuit integrity cables in the industry, as the only brand with solutions for critical power, control, communications, IP, and RF signals. Cables rated for 300 volts and higher are available.

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, VITALink® cables were retested to meet the stringent new requirements and reintroduced 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 encompasses both 300 volt & 600 volt solutions, including CI/CIC cables, Ethernet cables, coaxial cables, and CCW and MC armored cables.

UL TESTING & LISTED SYSTEMS

UL 2196/ULC-S139 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.

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 up to 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.

When approved to UL 2196, both the cable and the hardware components become part of a listed system. Installations that do not use the specified components along with the cable will not comply with the UL 2196 listing. Authorities having jurisdiction should be consulted for code or specification compliance. See page 17 for detailed technical information.

Our UL-Listed Systems:

- FHIT System 40A (US) & FHIT7 System 40A (Canada)
- FHIT System 40B (US) & FHIT7 System 40B (Canada)
- FHIT System 40C (US) & FHIT7 System 40C (Canada)
- FHIT System 60 (US) & FHIT7 System 60 (Canada)
- FHIT System 120 (US) & FHIT7 System 120 (Canada)
- FHIT System 120A (US) & FHIT7 System 120A (Canada)

COMMON USES

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

TABLE OF CONTENTS

- VITALink® 300 Volt Solutions3
 - VITALink® Dual Rated CI/CIC Cables 4
 - VITALink® CIC Cables 6
 - VITALink® Ethernet Cables 8
 - VITALink® Coax Cables10
 - VITALink® CCW Armored Cables12

- VITALink® 600 Volt Solutions15
 - VITALink® 300 RHW-2/RW90 Cables16
 - VITALink® 502 RHW-2/RW90 Cables18
 - VITALink® MC & RC90 Cables 20
 - VITALink® MC & RC90 Transit Cables..... 23

- Technical Information/Certified Hardware 26

VITALink® 300 VOLT SOLUTIONS

PRODUCTS

VITALink® 300V products include dual rated CI/CIC multiconductor cables, Ethernet cables, coaxial cables, and CCW armored cables.

UL FHIT Systems:

- VITALink® CI/CIC and VITALink® Ethernet: FHIT 40A (US) & FHIT7 40A (Canada)
- VITALink® Armored: FHIT 40B (US) & FHIT7 40B (Canada)
- VITALink® Coax

FEATURES & BENEFITS

- Withstands temperatures up to 1850°F & ensures 2 hour circuit protection
- Meets survivability requirements of NFPA 72 Level 2 and 3
- Listed for use in the United States (free air and conduit) & Canada (in conduit only)
- Sunlight resistant & suitable for use in wet locations
- Solutions for both plenum and riser installations
- No special tools or training required
- No termination kits, brass fittings, or stainless steel straps needed
- Installation requirements are outlined in manufacturer's instruction guide
- All required hardware components are commercially available off-the-shelf

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
- Fire Pump Controls
- Command Center Critical Systems
- Pressurized Stairway System Control Circuits

VITALink® Ethernet Cable

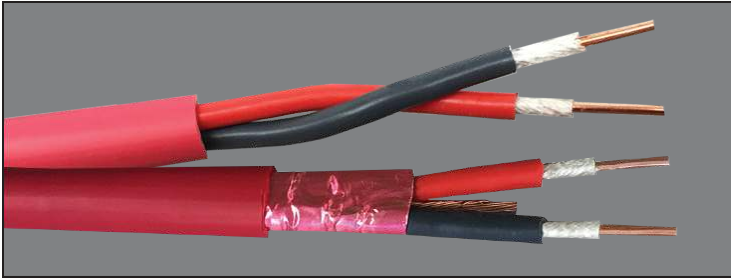
- Emergency VoIP Communications, e.g. Speakers & Telephones
- IP Area of Refuge Communication Devices
- Addressable Class N Fire Alarm Devices
- Critical Data Communication Circuits

VITALink® Coax

- DAS or BDA Systems
- Emergency Responder Radio Communications (ERRC) Systems

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



CONSTRUCTION

- Conductors: 18-12 AWG Solid Bare Copper and 16-12 AWG Stranded Bare Copper
- Insulation: Low Smoke, Zero Halogen Thermoset Fire-Roc®
- Tape: Flame Retardant Tape
- 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)
- Other jacket colors & non-black jacket striping available upon request

LISTINGS & STANDARDS

- ANSI/UL 2196 2 Hour fire rating for use in FHIT System 40A (See UL Fire Directory R27557)
- ULC-S139/2196 Listed with Hose Stream Test for use in FHIT7 System 40A
- UL Type FPLR-CI-ST1, CMR-CI-ST1, and CL3R-CI-ST1
- CSA Listed FAS 105 ST1 FT4
- UL 1424 for Power-Limited Fire Alarm Cables; 300V / 105°C
- UL 13 for Power-Limited Circuit Cables; 300V / 105°C
- UL 444 for Communication Cable; 300V / 105°C
- NFPA 70, 72, 130, and 502
- 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 listed FHIT System 40A/FHIT7 System 40A and in accordance with the manufacturer's installation instructions. These systems require 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.

*Note: The CIC acronym represents circuit integrity cables in conduit, not to be confused with the abbreviation for control & instrumentation cable in Canada.

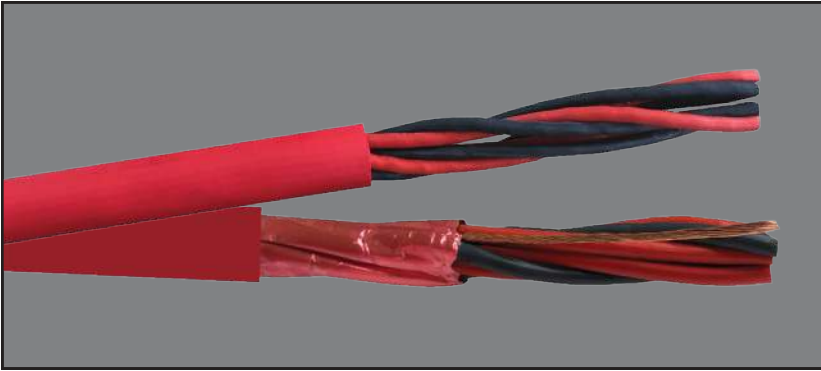
**Fire certified for power-limited system use at 72V phase-to-phase utilization voltage

PRODUCT MATRIX

Part Number	Size (AWG)	Number of Conductors	Solid or Stranded Conductors	Nominal Diameter (in/mm)	Approximate Net Weight (lbs/kft)	Nominal Capacitance (pF/ft.)
Shielded						
36397	18	2	Solid	0.309/7.85	49	21
35785	16	2	Solid	0.330/8.38	60	20
36316	14	2	Solid	0.359/9.12	73	25
Unshielded						
36337	18	2	Solid	0.305/7.75	41	13
35777	16	2	Solid	0.321/8.15	52	19
36341	16	2	Stranded	0.344/8.74	54	19
36338	14	2	Solid	0.352/8.94	61	20
36340	14	2	Stranded	0.368/9.38	65	20
36342	12	2	Solid	0.402/10.21	90	22
36339	12	2	Stranded	0.416/10.57	92	22

*Note: This acronym is not to be confused with the abbreviation for control & instrumentation cable in Canada. VITALink® CIC cables are for circuit integrity applications when installed in conduit.

**Fire certified for power-limited system use at 72V phase-to-phase utilization voltage



CONSTRUCTION

- Conductors: 18-12 AWG Solid Bare Copper and 16-12 AWG Stranded Bare Copper
- Insulation: Low Smoke, Zero Halogen Thermoset Fire-Roc®
- Tape: Flame Retardant Tape
- Cable Assembly: 3-8 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)
- Other jacket colors & non-black jacket striping available upon request

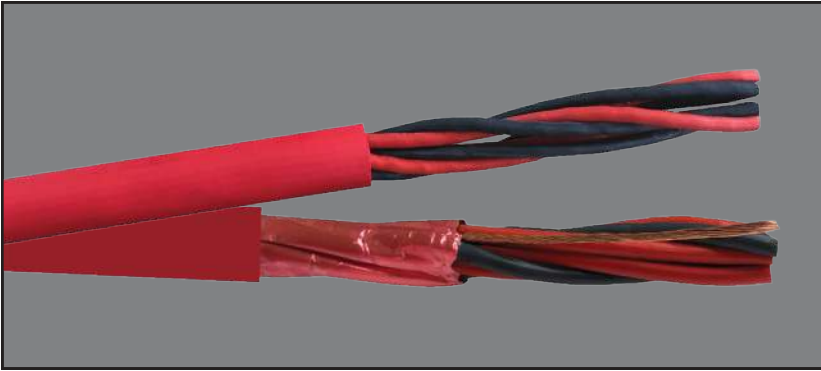
LISTINGS & STANDARDS

- ANSI/UL 2196 2 Hour fire rating for use in FHIT System 40A (See UL Fire Directory R27557)
- ULC-S139/2196 Listed with Hose Stream Test for use in FHIT7 System 40A
- UL Type FPLR-ST1, CR-ST1, and CL3R-ST1 Non-Shielded (3-8 Conductors only)
- CSA Listed FAS 105 ST1 FT4 (Shielded constructions only)
- UL 1424 for Power-Limited Fire Alarm Cables; 300V / 105°C
- UL 13 for Power-Limited Circuit Cables; 300V / 105°C
- UL 444 for Communication Cable; 300V / 105°C
- NFPA 70, 72, 130, and 502
- Sunlight Resistant
- For use in Wet Locations
- NYC Electrical Advisory Board approval #54502, April 2017 (Not applicable to 3-8 Conductors)
- California State Fire Marshal Approved
- RoHS Compliant

*Fire certified for power-limited system use at 72V phase-to-phase utilization voltage

PRODUCT MATRIX

Part Number	Size (AWG)	Number of Conductors	Solid or Stranded Conductors	Nominal Diameter (in/mm)	Approximate Net Weight (lbs/kft)
Shielded					
36660	18	3	Solid	0.331/8.41	61
36661	18	4	Solid	0.360/9.14	74
36662	18	6	Solid	0.444/11.28	108
36663	18	8	Solid	0.481/12.22	133
36664	16	3	Solid	0.353/8.97	73
36665	16	4	Solid	0.400/10.16	96
36666	16	6	Solid	0.476/12.09	133
36667	16	8	Solid	0.516/13.11	165
36668	14	3	Solid	0.397/10.08	100
36669	14	4	Solid	0.432/10.97	123
36670	14	6	Solid	0.516/13.11	171
36671	14	8	Solid	0.560/14.22	215
Unshielded					
36672	18	3	Solid	0.328/8.33	53
36673	18	4	Solid	0.357/9.07	66
36674	18	6	Solid	0.439/11.15	98
36675	18	8	Solid	0.476/12.09	122
36676	16	3	Solid	0.348/8.84	65
36677	16	4	Solid	0.394/10.01	87
36678	16	6	Solid	0.470/11.94	122
36679	16	8	Solid	0.510/12.95	154
36767	16	3	Stranded	0.366/9.30	72
36768	16	4	Stranded	0.414/10.52	96
36769	16	6	Stranded	0.495/12.57	135
36770	16	8	Stranded	0.537/13.64	171
36680	14	3	Solid	0.391/9.93	89
36681	14	4	Solid	0.426/10.82	112
36682	14	6	Solid	0.510/12.95	158
36683	14	8	Solid	0.554/14.07	201
36771	14	3	Stranded	0.407/10.34	97
36772	14	4	Stranded	0.443/11.25	121
36773	14	6	Stranded	0.531/13.49	172
36774	14	8	Stranded	0.578/14.68	219
36684	12	3	Solid	0.425/10.80	116
36685	12	4	Solid	0.465/11.81	147
36686	12	6	Solid	0.558/14.17	209
36687	12	8	Solid	0.607/15.42	270
36775	12	3	Stranded	0.444/11.28	125
36776	12	4	Stranded	0.485/12.32	159
36777	12	6	Stranded	0.584/14.83	228
36778	12	8	Stranded	0.635/16.13	293



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 (Shielded constructions only)
- Shield: Copper Shield (Shielded constructions only)
- Jacket: Red Non-Halogen Flame Retardant Polyolefin (Sequential footage markers every 2 feet)
- Other jacket colors & non-black jacket striping available upon request
- Comtran Patents: U.S. Patent No. 11,322,275 and Canada Patent No. 3,068,491

LISTINGS & STANDARDS

- ANSI/UL 2196 2 Hour fire rating for use in FHIT System 40A (See UL Fire Directory R27557)
- ULC-S139/2196 Listed with Hose Stream Test for use in FHIT7 System 40A
- UL Type FPLR-ST1 (Shielded constructions only) and CL3R-ST1
- c(UL)us Type CMR-ST1
- CSA Listed FAS 105 ST1 FT4 (Shielded constructions only)
- UL 1424 for Power-Limited Fire Alarm Cables; 300V / 105°C (Shielded constructions only)
- UL 13 for Power-Limited Circuit Cables; 300V / 105°C
- UL 444 for Communication Cable; 300V / 105°C
- NFPA 70, 72, 130, and 502
- Meets Cat 3 channel requirements perTIA-568.2-D throughout UL2196 Flame and Hose Stream Testing
- Transmits data speeds up to 10 Mbps
- Sunlight Resistant
- For use in Wet Locations
- California State Fire Marshal Approved
- RoHS Compliant

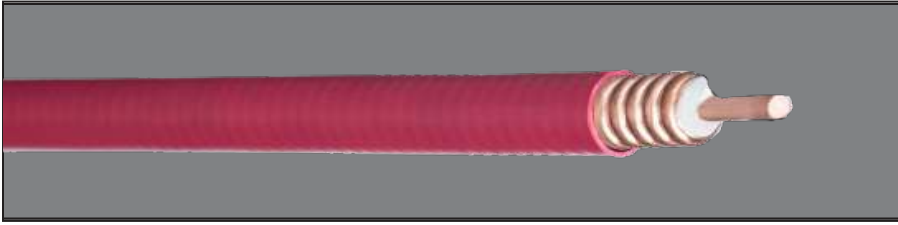
*Fire certified for power-limited system use at 72V phase-to-phase utilization voltage

PRODUCT MATRIX

Part Number	Size (AWG)	Number of Pairs	Nominal Diameter (in/mm)	Approximate Net Weight (lbs/kft)	Nominal Capacitance (pF/ft.)
Shielded					
36512	18	2	0.465/11.81	95	18
36530	18	3	0.489/12.42	113	18
36513	18	4	0.510/12.95	126	18
Unshielded					
36608	18	2	0.357/9.07	56	17
36610	18	3	0.379/9.63	71	17
36609	18	4	0.417/10.59	93	17

VITALink® ARMORED COAX

300 Volts*



CONSTRUCTION

- Conductor: Single 5 AWG bare copper conductor
- Filler: Flame retardant braided rope
- Armor: Continuously welded copper shield
- Jacket: Low Smoke Zero Halogen plenum jacket material (colors available on request)
- Bend Radius: 8 in/203.2 mm

LISTINGS & STANDARDS

- Listed Type CMP
- Listed to Type UL 2196 Circuit Integrity 2 Hour Rating
- Listed Type 444 Communications Cable; 300V/60°C Classified
- Rated for 50 Ohm
- Meets NFPA 70 Standard, Article 810, Communication Systems
- Meets NFPA 72 and NFPA 130 Standards
- Meets NFPA 262 CMP, Canada CSA 22.2/FT6

PRODUCT MATRIX

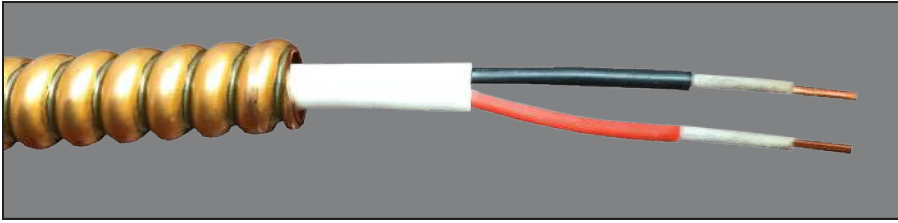
Part Number**	Size (AWG)	Number of Conductors	Outer Jacket	Nominal Core Diameter (in/mm)	Nominal Armor Diameter (in/mm)	Nominal Jacket Diameter (in/mm)	Minimum Radius Bend	Approximate Net Weight (lbs/kft)
36820	5	1	Yes	0.188 (4.78)	0.55 (13.97)	0.63 (16)	8 (203.2)	270

ATTENUATION AND POWER AVERAGE

Frequency MHz	Attenuation		Average Power kW
	dB/100 ft	dB/100 m	
150	1.12	3.67	4.82
450	2.32	7.61	1.68
600	2.88	9.45	1.46
700	3.20	10.50	1.46
800	3.56	11.68	1.18
900	3.86	12.66	1.18

*For Attenuation: VSWR 1.0, Ambient Temperature 20°C (68°F)

**For Average Power: VSWR 1.0, Ambient Temperature 40°C (104°F), Inner Conductor Temperature 100°C (212°F), No Solar Loading.



CONSTRUCTION

- Conductors: 16 AWG, 14 AWG, 12 AWG Solid Bare Copper Stranded
- Tape: Flame Retardant Tape
- Insulation: LSZH Thermoset Fire-Roc®
- Cable Assembly: 2-8 Conductors
- Shield 1: Copper/Polyester Tape (Shielded constructions only)
- Drain Wire: 16 or 14 AWG Stranded Bare Copper (Shielded constructions only)
- Shield 2: Copper/Polyester Tape (Shielded constructions only)
- Binder: Black or White Fire-Roc®
- Armor: Continuously Corrugated Welded (CCW) Copper
- Jacket (Optional): Black or Red Non-Halogen Flame Retardant Polyolefin (Sequential footage markers every 2 feet)
- Alternative jacket colors & non-black jacket striping (on the outside of the armor or jacket) available upon request

LISTINGS & STANDARDS

- ANSI/UL 2196 2 Hour fire rating for use in FHIT System 40B (See UL Fire Directory R27557)
- ULC-S139/2196 Listed with Hose Stream for use in FHIT7 System 40B
- UL Type FPLR-ST1 and CL3R-ST1
- c(UL)us CMR-ST1, UL 444, Communication Cables; 300V/105°C (16 AWG construction)
- CSA Listed FAS 105 ST1 FT4
- UL 1424 Power-Limited Fire Alarm Circuits; 300V/105°C
- UL 13 Power-Limited Circuit Cables; 300V/105°C
- NFPA 70, 72, 130, and 502
- California State Fire Marshal Approved
- RoHS Compliant

PRODUCT MATRIX

Part Number**	Number of Conductors	Nominal Core Diameter (in/mm)	Nominal Armor Diameter (in/mm)	Nominal Cable Diameter over Outer Jacket (in/mm)	Approximate Net Weight (Lbs/1000 ft.)
12 AWG Shielded Armored No Overall Jacket- FPLR-ST1/CL3R-ST1/FAS105 ST1 FT4					
36725	2	0.378/9.60	0.700/17.78	N/A	381
36789	3	0.401/10.19	0.700/17.78	N/A	405
36877	4	0.692/17.58	1.070/27.18	N/A	720
36879	5	0.487/12.37	0.783/19.89	N/A	521
36881	6	0.669/16.99	1.070/27.18	N/A	757
36883	7	0.534/13.56	0.880/22.35	N/A	657
36868	8	0.784/19.9	1.075/27.31	N/A	667
12 AWG Shielded Armored With Overall Jacket- FPLR-ST1/CL3R-ST1/FAS105 ST1 FT4					
36726	2	0.378/9.60	0.700/17.78	0.810/20.57	466
36790	3	0.401/10.19	0.700/17.78	0.810/20.57	490
36878	4	0.692/17.58	1.070/27.18	1.210/30.73	882
36880	5	0.487/12.37	0.783/19.89	0.923/23.44	645
36882	6	0.669/16.99	1.070/27.18	1.210/30.73	920
36884	7	0.534/13.56	0.880/22.35	1.020/25.91	792
36869	8	0.784/19.9	1.075/27.31	1.215/30.86	829
12 AWG Unshielded Armored No Overall Jacket- FPLR-ST1/CL3R-ST1/FAS105 ST1 FT4					
36723	2	0.366/9.30	0.660/16.76	N/A	336
12 AWG Unshielded Armored With Overall Jacket- FPLR-ST1/CL3R-ST1/FAS105 ST1 FT4					
36724	2	0.366/9.30	0.660/16.76	0.770/19.56	416
14 AWG Unshielded Armored No Overall Jacket- FPLR-ST1/CL3R-ST1/FAS105 ST1 FT4					
36516	2	0.334/8.484	0.620/15.748	N/A	264
36727	3	0.377/9.576	0.700/17.780	N/A	368
36517	4	0.504/12.802	0.880/21.336	N/A	447
36728	5	0.463/11.760	0.780/19.812	N/A	435
36518	6	0.538/13.665	0.880/22.352	N/A	506
36729	7	0.506/12.852	0.820/20.828	N/A	481
36519	8	0.605/15.367	0.920/23.368	N/A	589

*Fire certified for power-limited system use at 72V phase-to-phase utilization voltage

**Jacketed part numbers listed are for the red jacketed constructions. For a black jacket or a non-jacketed design, please contact us.

PRODUCT MATRIX

Part Number**	Number of Conductors	Nominal Core Diameter (in/mm)	Nominal Armor Diameter (in/mm)	Nominal Cable Diameter over Outer Jacket (in/mm)	Approximate Net Weight (Lbs/1000 ft.)
14 AWG Unshielded Armored With Overall Jacket - FPLR-ST1/CL3R-ST1/FAS105 ST1 FT4					
36520	2	0.334/8.484	0.620/15.748	0.684/17.374	306
36730	3	0.377/9.576	0.700/17.780	0.795/20.193	440
36521	4	0.504/12.802	0.840/21.336	0.934/23.724	532
36731	5	0.463/11.760	0.780/19.812	0.874/22.200	515
36522	6	0.538/13.665	0.880/22.352	0.974/24.740	601
36732	7	0.506/12.852	0.820/20.828	0.914/23.216	565
36523	8	0.605/15.367	0.920/23.368	1.024/26.100	682
16 AWG Shielded & Armored - No Overall Jacket					
36735	2	0.370/9.398	0.660/16.764	N/A	297
36736	3	0.372/9.449	0.660/16.764	N/A	328
36737	4	0.740/18.796	1.043/26.492	N/A	480
36738	5	0.450/11.430	0.780/19.812	N/A	357
36739	6	0.799/20.295	1.155/29.337	N/A	581
36740	7	0.471/11.963	0.840/21.336	N/A	478
36741	8	0.860/21.844	1.220/30.988	N/A	664
16 AWG Shielded & Armored - With Overall Jacket					
36742	2	0.370/9.398	0.660/16.764	0.724/18.390	346
36743	3	0.372/9.449	0.660/16.764	0.724/18.390	373
36744	4	0.740/18.796	1.043/26.492	1.167/29.642	620
36745	5	0.450/11.430	0.780/19.812	0.844/21.438	470
36746	6	0.799/20.295	1.155/29.337	1.279/32.487	736
36747	7	0.471/11.963	0.840/21.336	0.934/23.724	563
36748	8	0.860/21.844	1.220/30.988	1.344/34.14	826

VITALink® FPLR-ST1 CL3R-ST1 (UL) [and CMR-ST1 c(UL)us #/C xx AWG 105C FT4 SUN RES WET or CSA FAS105 ST1 FT4 ST1 LL-14444 FRR-2HR FHIT.40B/FHIT7 .40B UL 2196/ULC S139 MAX VOLTAGE 72 V PM #####

*Note: [and CMR-ST1 c(UL)us]- Only applicable to 16 AWG

VITALink® 600 VOLT SOLUTIONS

PRODUCTS

VITALink® 600V products include MC armored cables for installations in the United States and RC90 cables for installations in Canada. LSZH jacketed constructions are available for the transit market.

UL FHIT Systems:

- VITALink® MC & VITALink® MC Transit: FHIT 120
 - VITALink® RC90 & VITALink® RC90 Transit: FHIT7 120
 - VITALink® MC & VITALink® MC Transit Block Splice: FHIT 120A
 - VITALink® RC90 & VITALink® RC90 Transit Block Splice: FHIT7 120A
 - VITALink® MC & VITALink® MC Transit Fused Block & Pigtail Tape Splice: FHIT 60
 - VITALink® RC90 & VITALink® RC90 Transit Fused Block & Pigtail Tape Splice: FHIT7 60
- Please visit page 17 to find more technical details.

FEATURES & BENEFITS

- Withstands temperatures up to 1850°F & ensures 2 hour circuit protection
- Listed for use in the United States & Canada
- Printed number coding allows for easy identification (ICEA Method 4)
- Superior impact & crush resistance
- Long continuous lengths available
- Only conventional tools required to terminate
- Commercially available brass/stainless steel connectors
- Installation requirements are outlined in manufacturer's instruction guide

APPLICATIONS

VITALink® MC & RC90 Cable

- Emergency Lighting
- Ventilation Systems
- Fan/Damper Pressurization Systems
- Fire Pump Feeder/Controls
- Smoke Control & Management Equipment
- Pressurized Stairway Systems
- Elevators

VITALink® MC Transit & RC90 Transit Cable

- Emergency Lighting
- Ventilation Systems



CONSTRUCTION

- Conductor: 12 AWG - 500 kcmil Bare Copper (Class B)
- Insulation: Two Layer Composite Construction
 - Inner Layer: Proprietary LSZH Thermoset Fire-Roc®
 - Outer Layer: Black LSZH Crosslinked Polyolefin (XLPO)

LISTINGS & STANDARDS

- UL 2196/ULC-S139 for 1 hour at 480V for use with Champion Flame Shield Phenolic Conduit Type XW per FHIT/FHIT7 System 130
- UL/ULC Listed Splice Available
- UL/cUL Listed, NEC and CE Code Types RHW-2/RW90 in accordance with UL Standard No. 44/CSA 22.8.38
- UL Listed FT4/IEEE 1202 Vertical Flame Test
- UL Listed as ST1 per UL 44 and UL 2556/1685 (FT4 Method), meeting smoke and flame requirements of NFPA 130
- UL Listed 90°C for Wet and Dry Locations
- UL Listed as -40°C
- UL Listed as Gasoline and Oil Resistant Type II
- UL Listed as Sunlight Resistant
- Low Toxicity Index per NES 713

PRODUCT MATRIX

Part Number	Size (AWG/kcmil)	Number of Strands	Nominal Diameter (in/mm)	Approximate Net Weight (lbs/kft)	Ampacity* (amperes)
VR01012-300	12	7	0.21/5.33	39	20**
VR01010-300	10	7	0.24/6.10	54	30**
VR01008-300	8	7	0.30/7.62	84	55
VR01006-300	6	7	0.36/9.14	126	75
VR01004-300	4	7	0.41/10.41	182	95
VR01003-300	3	7	0.44/11.18	220	115
VR01002-300	2	7	0.47/11.94	268	130
VR01001-300	1	19	0.55/13.97	360	145
VR011X0-300	1/0	19	0.59/14.98	435	170
VR012X0-300	2/0	19	0.64/16.26	530	195
VR013X0-300	3/0	19	0.69/17.53	650	225
VR014X0-300	4/0	19	0.74/18.79	800	260
VR01250-300	250	37	0.85/21.59	975	290
VR01300-300	300	37	0.90/22.86	1140	320
VR01350-300	350	37	0.95/24.13	1315	350
VR01400-300	400	37	1.00/25.40	1485	380
VR01500-300	500	37	1.08/27.43	1820	430

¹ Ampacity is based on Table 310.16 of the 2020 National Electrical Code (NEC) based on the 90°C column with 30°C ambient, and 3 current carrying conductors. Temperature limitations per 110.14 of the NEC needs to be considered. Table does not take into consideration voltage drop or fault current capability.

**Ampacity shown for 12 and 10 AWG conductors is limited by NEC section 240.4(D)



CONSTRUCTION

- Conductors: 12 AWG to 500 Kcmil Class "B" Stranded Bare Copper
- Tape: Flame Retardant Tape
- Insulation: Two Layer Composite Construction
- Cable Assembly: Single Conductors
- Strands: 7 to 37 Strands
- Inner Layer: Black Proprietary Low Smoke, Zero Halogen Thermoset Fire-Roc®
- Outer Layer: Black Low Smoke, Zero Halogen Crosslinked Polyolefin (LSZH XLPO) (Colors available upon request)

LISTINGS & STANDARDS

- Listed to latest revision of UL 2196/ULC S-139 for 2 hour with Champion Flame Shield Phenolic Conduit Type XW
- UL/cUL Listed, NEC Type RHW-2/RW90 in accordance with UL Standard No. 44
- UL Listed FT4/IEEE 1202 Vertical Flame test
- UL Listed -ST1 per UL 44 and UL 1685 (FT4 Method), meeting smoke and flame requirements of NFPA 502
- UL Listed 90°C for both wet and dry locations
- UL Listed as -40°C
- UL Listed as Gasoline and Oil Resistant Type II
- UL Listed as Sunlight Resistant
- Low toxicity index per NES 713
- Less than 2% acid gas per NFPA 502

PRODUCT MATRIX

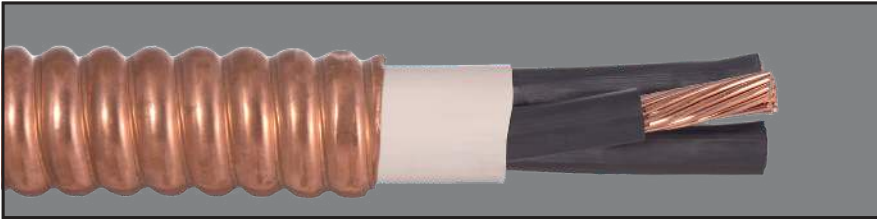
Product Code	Conductor Size (AWG/Kcmil)	Number of Strands	Insulation Thickness (mils)	Approx. Diameter (inches)	Approx. Weight (lbs/kft)	Ampacity ¹ (amperes)
VR01012-500	12	7	45	0.21	39	20 ²
VR01010-500	10	7	45	0.24	54	30 ²
VR01008-500	8	7	60	0.30	84	55
VR01006-500	6	7	75	0.36	126	75
VR01004-500	4	7	75	0.41	182	95
VR01003-500	3	7	75	0.44	220	115
VR01002-500	2	7	75	0.47	268	130
VR01001-500	1	19	100	0.55	360	145
VR011X0-500	1/0	19	100	0.59	435	170
VR012X0-500	2/0	19	100	0.64	530	195
VR013X0-500	3/0	19	100	0.69	650	225
VR014X0-500	4/0	19	100	0.74	800	260
VR01250-500	250	37	130	0.85	975	290
VR01300-500	300	37	130	0.90	1140	320
VR01350-500	350	37	130	0.95	1315	350
VR01400-500	400	37	130	1.00	1485	380
VR01500-500	500	37	130	1.08	1820	430

Notes:

¹ Ampacity is based on Table 310.16 of the 2020 National Electrical Code (NEC) based on the 90C column with 30C ambient, and 3 current carrying conductors. Temperature limitations per 110.14 of the NEC needs to be considered. Table does not take into consideration voltage drop or fault current capability.

² Ampacity shown for 12 and 10 AWG conductors is limited by NEC section 240.4(D).

**Note: UL 2196 Listing is pending for sizes 300 kcmil to 500 kcmil



MC CONSTRUCTION

- Conductors: 14 AWG - 750 kcmil Annealed Copper (Class B)
- Insulation: Low Smoke, Zero Halogen Ceramifiable Silicone
- Cable Assembly: 1-5 Conductors*
- Optional Segmented Ground Wires
- Inner Jacket: Ceramifiable Silicone Rubber
- Armor: Continuously Corrugated Welded (CCW) Copper

VITALink® MC LISTINGS & STANDARDS For Installation in the United States

- ANSI/UL 2196 2 Hour fire rating for use in FHIT Systems 120, 120A, and 60 (See UL Fire Directory R15365)
- UL Listed Splice Available
- UL 1569 for Type MC
- NFPA 70, 72, and 101
- IEEE 1202/FT4 vertical flame test; ST1 limited smoke
- -40°C listed
- Copper sheath exceeds the NEC requirement for equipment grounding conductor Table 250.122

VITALink® RC90 LISTINGS & STANDARDS For Installation in Canada

- ULC-S139/2196 Listed with Hose Stream Test for use in FHIT7 Systems 120, 120, and 60 (See UL Fire Directory R15365)
- ULC Listed Splice Available
- cUL Type RC90 per CSA 22.2 No 123
- CSA 22.1 Article 12-700
- IEEE 1202/FT4 vertical flame test; ST1 limited smoke
- Copper sheath can be used for equipment bonding exceeding CEC Rule 10-618 and 10-804
- NBC OS1, NBC 3.2.7.10, NBC 3.2.6
- -40°C listed
- 90°C for Wet Locations with approval by AHJ

**Up to 12 conductor configurations possible. Other constructions available upon request.
Contact manufacturer for more details.*

PRODUCT MATRIX - 1, 2, & 3 CONDUCTORS

Part Number	Size (AWG kcmil)	Number of Conductors	Nom. Core Diameter (in/mm)	Nom. Armor Diameter (in/mm)	Approximate Net Weight (lbs/kft)
VM011X0-100	1/0	1	0.66/16.76	1.00/25.40	815
VM012X0-100	2/0	1	0.70/17.78	1.04/26.42	925
VM013X0-100	3/0	1	0.75/19.05	1.08/27.43	1,055
VM014X0-100	4/0	1	0.81/20.57	1.16/29.46	1,235
VM01250-100	250	1	0.89/22.61	1.22/30.99	1,410
VM01350-100	350	1	0.99/25.15	1.35/34.29	1,795
VM01500-100	500	1	1.13/28.70	1.50/38.10	2,350
VM01750-100	750	1	1.34/34.04	1.73/43.94	3,285
VM02014-100	14	2	0.49/12.45	0.82/20.83	395
VM02012-100	12	2	0.53/13.46	0.82/20.83	415
VM02010-100	10	2	0.58/14.73	0.89/22.61	475
VM03014-100	14	3	0.52/13.21	0.82/20.83	425
VM03012-100	12	3	0.56/14.22	0.89/22.61	475
VM03010-100	10	3	0.61/15.49	0.94/23.88	542
VM03008-100	8	3	0.72/18.29	1.04/26.42	675
VM03006-100	6	3	0.80/20.32	1.16/29.46	840
VM03004-100	4	3	0.91/23.11	1.24/31.50	1,140
VM03003-100	3	3	0.97/24.64	1.30/33.02	1,210
VM03002-100	2	3	1.04/26.42	1.41/35.81	1,400
VM03001-100	1	3	1.21/30.73	1.59/40.39	1,715
VM031X0-100	1/0	3	1.29/32.77	1.67/42.42	1,990
VM032X0-100	2/0	3	1.39/35.31	1.80/45.72	2,345
VM033X0-100	3/0	3	1.49/37.85	1.92/48.77	2,755
VM034X0-100	4/0	3	1.62/41.15	2.04/51.82	3,305
VM03250-100	250	3	1.80/45.72	2.26/57.40	3,870
VM03350-100	350	3	2.02/51.31	2.48/62.99	5,015
VM03500-100	500	3	2.30/58.42	2.82/71.63	6,720

PRODUCT MATRIX - 4 & 5 CONDUCTORS

Part Number	Size (AWG kcmil)	Number of Conductors	Nom. Core Diameter (in/mm)	Nom. Armor Diameter (in/mm)	Approximate Net Weight (lbs/kft)
VM04014-100	14	4	0.57/14.48	0.89/22.61	480
VM04012-100	12	4	0.62/15.78	0.94/23.88	575
VM04010-100	10	4	0.67/17.02	1.00/25.40	635
VM04008-100	8	4	0.80/20.32	1.16/29.46	815
VM04006-100	6	4	0.89/22.61	1.22/30.99	990
VM04004-100	4	4	1.00/25.40	1.35/34.29	1,285
VM04003-100	3	4	1.07/27.18	1.41/35.81	1,475
VM04002-100	2	4	1.15/29.21	1.50/38.10	1,710
VM04001-100	1	4	1.34/34.04	1.73/43.94	2,125
VM041X0-100	1/0	4	1.43/36.32	1.82/46.23	2,485
VM042X0-100	2/0	4	1.54/39.12	1.95/49.53	2,935
VM043X0-100	3/0	4	1.68/42.67	2.12/53.85	3,530
VM044X0-100	4/0	4	1.82/46.23	2.26/57.40	4,205
VM04250-100	250	4	2.00/50.80	2.46/62.48	4,925
VM04350-100	350	4	2.25/57.15	2.71/68.83	6,420
VM04500-100	500	4	2.60/66.04	3.13/79.50	8,740
VM05014-100	14	5	0.63/16.00	0.94/23.88	535
VM05012-100	12	5	0.68/17.27	1.00/25.40	615
VM05010-100	10	5	0.74/18.80	1.08/27.43	720
VM05008-100	8	5	0.88/22.35	1.22/30.99	930
VM05006-100	6	5	0.99/25.15	1.30/33.02	1,160
VM05004-100	4	5	1.11/28.19	1.48/37.59	1,525



CONSTRUCTION

- Conductors: 14 AWG - 750 kcmil Annealed Copper (Class B)
- Insulation: Low Smoke, Zero Halogen Ceramifiable Silicone
- Cable Assembly: 1-5 Conductors*
- Optional segmented ground wires
- Inner Jacket: Ceramifiable Silicone Rubber
- Armor: Continuously Corrugated Welded (CCW) Copper
- Jacket: Flame Resistant Low Smoke, Zero Halogen (colorable)

VITALink® MC TRANSIT LISTINGS & STANDARDS For Installation in the U.S.

- ANSI/UL 2196 2 Hour fire rating for use in FHIT Systems 120, 120A, and 60 (See UL Fire Directory R15365)
- UL Listed Splice Available
- UL 1569 for Type MC
- NFPA 70, 72, 101, 130, and 502
- IEEE 1202/FT4 vertical flame test; ST1 limited smoke
- New York City Approval
- Copper sheath exceeds the NEC requirement for equipment grounding conductor Table 250.122
- -40°C listed
- 90°C for Wet Locations
- Sunlight Resistant

VITALink® RC90 TRANSIT LISTINGS & STANDARDS For Installation in Canada

- ULC-S139/2196 Listed with Hose Stream Test for use in FHIT7 Systems 120, 120, and 60 (See UL Fire Directory R15365)
- ULC Listed Splice Available
- cUL Type RC90 per CSA 22.2 No 123
- CSA 22.1 Article 12-700
- NFPA 130 and 502
- IEEE 1202/FT4 vertical flame test; ST1 limited smoke
- Copper sheath can be used for equipment bonding exceeding CEC Rule 10-618 and 10-804
- NBC OS1, NBC 3.2.7.10
- -40°C listed
- 90°C for Wet Locations
- Sunlight Resistant

PRODUCT MATRIX - 1, 2, & 3 CONDUCTORS

Part Number	Size (AWG kcmil)	Number of Conductors	Nominal Core Diameter (in/mm)	Nominal Armor Diameter (in/mm)	Nominal Cable Diameter over Outer Jacket (in/mm)	Approximate Net Weight (lbs/kft)
VM011X0-200	1/0	1	0.66/16.76	1.00/25.40	1.11/28.19	935
VM012X0-200	2/0	1	0.70/17.78	1.04/26.42	1.15/29.21	1,050
VM013X0-200	3/0	1	0.75/19.05	1.08/27.43	1.18/29.97	1,190
VM014X0-200	4/0	1	0.81/20.57	1.16/29.46	1.26/32.00	1,375
VM01250-200	250	1	0.89/22.61	1.22/30.99	1.32/33.53	1,555
VM01350-200	350	1	0.99/25.15	1.35/34.29	1.45/36.83	1,955
VM01500-200	500	1	1.13/28.70	1.50/38.10	1.60/40.64	2,530
VM01750-200	750	1	1.34/34.04	1.73/43.94	1.85/46.99	3,535
VM02014-200	14	2	0.49/12.45	0.82/20.83	0.92/23.37	495
VM02012-200	12	2	0.53/13.46	0.82/20.83	0.92/23.37	520
VM02010-200	10	2	0.58/14.73	0.89/22.61	0.99/25.15	585
VM03014-200	14	3	0.52/13.21	0.82/20.83	0.92/23.37	525
VM03012-200	12	3	0.56/14.22	0.89/22.61	0.99/25.15	585
VM03010-200	10	3	0.61/15.49	0.94/23.88	1.04/26.42	660
VM03008-200	8	3	0.72/18.29	1.04/26.42	1.15/29.21	800
VM03006-200	6	3	0.80/20.32	1.16/29.46	1.26/32.00	980
VM03004-200	4	3	0.91/23.11	1.24/31.50	1.34/34.04	1,210
VM03003-200	3	3	0.97/24.64	1.30/33.02	1.40/35.56	1,365
VM03002-200	2	3	1.04/26.42	1.41/35.81	1.51/38.35	1,570
VM03001-200	1	3	1.21/30.73	1.59/40.39	1.71/43.43	1,945
VM031X0-200	1/0	3	1.29/32.77	1.67/42.42	1.79/45.47	2,230
VM032X0-200	2/0	3	1.39/35.31	1.80/45.72	1.92/48.77	2,600
VM033X0-200	3/0	3	1.49/37.85	1.92/48.77	2.04/51.82	3,030
VM034X0-200	4/0	3	1.62/41.15	2.04/51.82	2.16/54.86	3,595
VM03250-200	250	3	1.80/45.72	2.26/57.40	2.41/61.21	4,275
VM03350-200	350	3	2.02/51.31	2.48/62.99	2.63/66.80	5,460
VM03500-200	500	3	2.30/58.42	2.82/71.63	2.97/75.44	7,225

PRODUCT MATRIX - 4 & 5 CONDUCTORS

Part Number	Size (AWG kcmil)	Number of Conductors	Nominal Core Diameter (in/mm)	Nominal Armor Diameter (in/mm)	Nominal Cable Diameter over Outer Jacket (in/mm)	Approximate Net Weight (lbs/kft)
VM04014-200	14	4	0.57/14.48	0.89/22.61	0.99/25.15	590
VM04012-200	12	4	0.62/15.75	0.94/23.88	1.04/26.42	660
VM04010-200	10	4	0.67/17.02	1.00/25.40	1.11/28.19	755
VM04008-200	8	4	0.80/20.32	1.16/29.46	1.26/32.00	955
VM04006-200	6	4	0.89/22.61	1.22/30.99	1.32/33.53	1,340
VM04004-200	4	4	1.00/25.40	1.35/34.29	1.45/36.83	1,450
VM04003-200	3	4	1.07/27.18	1.41/35.82	1.51/38.35	1,645
VM04002-200	2	4	1.15/29.21	1.50/38.10	1.60/40.64	1,890
VM04001-200	1	4	1.34/34.04	1.73/43.94	1.85/46.99	2,375
VM041X0-200	1/0	4	1.43/36.32	1.82/46.23	1.94/49.28	2,745
VM042X0-200	2/0	4	1.54/39.12	1.95/49.53	2.07/52.58	3,215
VM043X0-200	3/0	4	1.68/42.67	2.12/53.85	2.25/57.15	3,830
VM044X0-200	4/0	4	1.82/46.23	2.26/57.40	2.41/61.21	4,610
VM04250-200	250	4	2.00/50.80	2.46/62.48	2.63/66.80	5,365
VM04350-200	350	4	2.25/57.15	2.71/68.83	2.86/72.64	6,905
VM04500-200	500	4	2.60/66.04	3.13/79.50	3.30/83.82	9,370
VM05014-200	14	5	0.63/16.00	0.94/23.88	1.04/26.42	645
VM05012-200	12	5	0.68/17.27	1.00/25.40	1.11/28.19	735
VM05010-200	10	5	0.74/18.80	1.08/27.43	1.18/29.97	850
VM05008-200	8	5	0.88/22.35	1.22/30.99	1.32/33.53	1,075
VM05006-200	6	5	0.99/25.15	1.30/33.02	1.40/35.56	1,315
VM05004-200	4	5	1.11/28.19	1.48/37.59	1.58/40.13	1,705

TECHNICAL INFORMATION

Most VITALink® products must be installed with specific hardware components, as outlined in the following pages. For further details, please refer to the manufacturers' installation guides and splicing guides.

TABLE OF CONTENTS

- VITALink® 300 Volt Certified Hardware 27
- VITALink® 300 Volt Conduit Fill Matrixes 30
- VITALink® 600 Volt Certified Hardware 33
- American Connector Cross-Reference 34

VITALink® 300 VOLT CERTIFIED HARDWARE

VITALink® CI/CIC* (UL FHIT/FHIT7 SYSTEM 40A)

- 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 and True Color, Columbia-MBF E-Z Pull® and True Color Brand, or Wheatland/Western Tube Co. and Wheatland Color EMT
 - 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, 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.
- Bridgeport Fittings Inc Might-Move® Steel EMT or IMC Sliding Expansion Screw Couplings*
 - (Not Shown)
 - Expansion joint couplings are approved for use with 2 conductor construction only and can be used with EMT and IMC installations, trade size to correspond with the raceway size. See tables below for usage guidelines.

*Listed and labeled to meet the requirements of the NEC/CEC

Vertical & Horizontal - Shielded 2 Conductor Constructions

Raceway/ Conduit Size	Max. # of 14 AWG- 36316	Max. # of 16 AWG- 35785	Max. # of 18 AWG- 36397
¾"	N/A	N/A	2
1"	3	3	4
1 ¼"	5	4	4
1 ½"	6	4	4
2"	10	4	4

Vertical & Horizontal- Non-Shielded 2 Conductor Constructions

Raceway/ Conduit Size	Max. # of 12 AWG- 36342, 36339	Max. # of 14 AWG- 36349	Max. # of 14 AWG- 36338	Max. # of 16 AWG- 36341	Max. # of 16 AWG- 35777	Max. # of 18 AWG- 36337
¾"	1	1	1	1	2	2
1"	2	2	3	3	3	4
1 ¼"	4	4	5	4	4	4
1 ½"	6	6	7	4	4	4
2"	9	10	10	4	4	4

Supports - Min 12-gauge, by 1-1/2-inch-wide or 1-5/8-inch-wide, painted or unpainted, slotted steel channels with hemmed flange edges. Channel bottom with or without holes. Lengths of slotted steel channels 5 feet and less shall be secured to the wall or floor with a min of two 1/4-inch diameter (or larger) by 2-1/4-inch min long concrete screws, or 1/4-inch diameter (or larger) by 1-3/4-inch-long min steel masonry anchors. One screw or anchor to be located at each end of the slotted steel channel. Lengths of slotted steel channel in excess of 5 feet require a min of three screws or anchors, one at each end of the channel and one centrally located within the length of the channel. Supports for vertical and horizontal installation shall not exceed 5 feet on center.

VITALink® 300 VOLT CERTIFIED HARDWARE

VITALink® CI/CIC* (UL FHIT/FHIT7 SYSTEM 40A) Cont.

- Pulling Lubricant: American Polywater Type LZ
- Hubbell/Wiegmann steel 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) and Adalet NEMA 4X SST enclosure with (RACO) or Thomas & Betts Corp (ABB) or steel threaded connectors (RACO)
- Stainless steel wire mesh support grips when exceeding specified maximum vertical length
- Supports per manufacturer's installation instructions
- Splicing per manufacturer's splicing guide. Splice kits are available upon request.

VITALink® ETHERNET** (UL FHIT/FHIT7 SYSTEM 40A)

- EMT Conduit:
 - 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 and True Color, Columbia-MBF E-Z Pull® and True Color Brand, or Wheatland/Western Tube Co. and Wheatland Color EMT
 - 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, 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 steel 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) and Adalet NEMA 4X SST enclosure with (RACO) or Thomas & Betts Corp (ABB) or steel threaded connectors (RACO)
- Stainless steel wire mesh support grips when exceeding specified maximum vertical length
- Supports per manufacturer's installation instructions

*Refers to in conduit installations only

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

300 VOLT CERTIFIED HARDWARE

VITALink® ARMORED (UL FHIT/FHIT7 SYSTEM 40B)

- Supports: Min 12 AWG by 1 ½ inch wide or 1 ⅝ inch wide painted or unpainted slotted steel channels with hemmed flange edges
- Clamps (For jacketed cable): T&B J-800 2 hold one piece strap, two piece single hole with strut nut and washer on each side of cable and in contact with the strap or 2 hold steel strap
- Clamps (For unjacketed cable): Two piece single bolt type pipe clamp or one piece saddle type pipe clamps
- Optional: Cable Tray - open ladder type hot dipped or electroplated galvanized steel cable tray
- Optional Supports (For horizontal installation): Snake Tray 505 series

VITALink® COAX (UL FHIT/FHIT7 SYSTEM 40C)

- Strut Channels: 12 AWG galvanized 1 5/8th " x 1 5/8" having holes
- Cable Clamps: 16 AWG galvanized steel cable clamps, 1 1/4" wide sized for 1/2" cable and designed for use with strut channels
- Steel Bolt: min #10 x 1" with nut

VITALink® 300 VOLT CONDUIT FILL MATRIXES

VITALink® DUAL RATED CI/CIC

Part Number	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)	1 Cable	2 Cables	4 Cables	7 Cables	7 Cables	7 Cables
16/2 Solid (35785)	—	—	3 Cables	6 Cables	8 Cables	10 Cables
14/2 Solid (36316)	—	—	3 Cables	5 Cables	6 Cables	10 Cables
Unshielded						
18/2 Solid (36337)	1 Cable	2 Cables	4 Cables	7 Cables	8 Cables	10 Cables
16/2 Solid (35777)	1 Cable	2 Cables	3 Cables	6 Cables	8 Cables	10 Cables
16/2 Stranded (36341)	1 Cable	1 Cable	3 Cables	5 Cables	7 Cables	10 Cables
14/2 Solid (36338)	1 Cable	1 Cable	3 Cables	5 Cables	7 Cables	10 Cables
14/2 Stranded (36340)	1 Cable	1 Cable	2 Cables	4 Cables	6 Cables	10 Cables
12/2 Solid (36342)	1 Cable	1 Cable	2 Cables	4 Cables	6 Cables	10 Cables
12/2 Stranded (36339)	1 Cable	1 Cable	2 Cables	4 Cables	5 Cables	9 Cables

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

Both shielded and unshielded VITALink CI/CIC cables may be installed in the same raceway when not exceeding the maximum number of cables associated with any of the cable sizes installed within the common raceway. E.g. 12 AWG & 18 AWG cables installed in the same 2 inch raceway are limited to a maximum of 7 cables.

300 VOLT CONDUIT FILL MATRIXES

VITALink® CIC

Part Number	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						
18/3 Solid (36660)	-	1 Cable	3 Cables	6 Cables	6 Cables	6 Cables
18/4 Solid (36661)	-	1 Cable	3 Cables	5 Cables	5 Cables	5 Cables
18/6 Solid (36662)	-	1 Cable	1 Cable	3 Cables	3 Cables	3 Cables
18/8 Solid (36663)	-	1 Cable	1 Cable	2 Cables	2 Cables	2 Cables
16/3 Solid (36664)	-	-	2 Cables	5 Cables	7 Cables	9 Cables
16/4 Solid (36665)	-	-	2 Cables	4 Cables	5 Cables	6 Cables
16/6 Solid (36666)	-	-	1 Cable	2 Cables	3 Cables	4 Cables
16/8 Solid (36667)	-	-	1 Cable	2 Cables	3 Cables	4 Cables
14/3 Solid (36668)	-	-	2 Cables	4 Cables	5 Cables	7 Cables
14/4 Solid (36669)	-	-	2 Cables	3 Cables	4 Cables	6 Cables
14/6 Solid (36670)	-	-	1 Cable	2 Cables	2 Cables	4 Cables
14/8 Solid (36671)	-	-	1 Cable	2 Cables	2 Cables	4 Cables
Unshielded						
18/3 Solid (36672)	-	1 Cable	3 Cables	5 Cables	7 Cables	8 Cables
18/4 Solid (36673)	-	1 Cable	2 Cables	5 Cables	6 Cables	8 Cables
18/6 Solid (36674)	-	-	1 Cable	3 Cables	3 Cables	4 Cables
18/8 Solid (36675)	-	-	1 Cable	2 Cables	3 Cables	4 Cables
16/3 Solid (36676)	-	1 Cable	2 Cables	4 Cables	7 Cables	9 Cables
16/4 Solid (36677)	-	1 Cable	2 Cables	3 Cables	5 Cables	7 Cables
16/6 Solid (36678)	-	-	1 Cable	2 Cables	3 Cables	5 Cables
16/8 Solid (36679)	-	-	1 Cable	2 Cables	3 Cables	4 Cables
16/3 Stranded (36767)	-	-	2 Cables	4 Cables	5 Cables	8 Cables
16/4 Stranded (36768)	-	-	2 Cables	3 Cables	4 Cables	6 Cables
16/6 Stranded (36769)	-	-	1 Cable	2 Cables	3 Cables	4 Cables
16/8 Stranded (36770)	-	-	1 Cable	2 Cables	2 Cables	4 Cables
14/3 Solid (36680)	-	-	2 Cables	4 Cables	5 Cables	6 Cables
14/4 Solid (36681)	-	-	2 Cables	3 Cables	4 Cables	6 Cables
14/6 Solid (36682)	-	-	1 Cable	2 Cables	3 Cables	4 Cables
14/8 Solid (36683)	-	-	1 Cable	2 Cables	2 Cables	4 Cables
14/3 Stranded (36771)	-	-	1 Cable	3 Cables	4 Cables	8 Cables
14/4 Stranded (36772)	-	-	1 Cable	2 Cables	3 Cables	5 Cables
14/6 Stranded (36773)	-	-	-	1 Cable	2 Cables	4 Cables
14/8 Stranded (36774)	-	-	-	1 Cable	2 Cables	4 Cables
12/3 Solid (36684)	-	-	1 Cable	3 Cables	4 Cables	8 Cables
12/4 Solid (36685)	-	-	1 Cable	2 Cables	4 Cables	7 Cables
12/6 Solid (36686)	-	-	-	1 Cable	2 Cables	4 Cables
12/8 Solid (36687)	-	-	-	1 Cable	2 Cables	4 Cables
12/3 Stranded (36775)	-	-	1 Cable	3 Cables	4 Cables	7 Cables
12/4 Stranded (36776)	-	-	1 Cable	2 Cables	3 Cables	5 Cables
12/6 Stranded (36777)	-	-	-	1 Cable	2 Cables	4 Cables
12/8 Stranded (36778)	-	-	-	1 Cable	2 Cables	3 Cables

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

Both shielded and unshielded VITALink® CI/CIC cables may be installed in the same raceway when not exceeding the maximum number of cables associated with any of the cable sizes installed within the common raceway. E.g. 12 AWG & 18 AWG cables installed in the same 2 inch raceway are limited to a maximum of 7 cables.

300 VOLT CONDUIT FILL MATRIXES

VITALink® ETHERNET

Part Number	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					
18/2P (36512)	1 Cable	—	—	—	—
18/3P (36530)	1 Cable	—	—	—	—
18/4P (36513)	1 Cable	—	—	—	—
Unshielded					
18/2P (36608)	1 Cable	2 Cables	4 Cables	5 Cables	7 Cables
18/3P (36610)	1 Cable	2 Cables	3 Cables	5 Cables	7 Cables
18/4P (36609)	1 Cable	1 Cable	3 Cables	4 Cables	7 Cables

VITALink® 600 VOLT CERTIFIED HARDWARE

VITALink® MC/RC90 & VITALink® MC/RC90 TRANSIT (UL FHIT/FHIT7 SYSTEM 120)

- Clamps (For jacketed cable): Two-hole steel strap and/or Kindorf® J-800 series interlocking strap
- Clamps (For unjacketed cable): Two-hole steel strap, Kindorf® J-800 series interlocking strap, and/or two piece single bolt pipe clamps or single bolt saddle clamps
- Trapeze-type Supports: Must be secured from the surface of the concrete or masonry floor. Refer to manufacturer's installation guide for details.
- Cable Tray-type Supports: Must be secured to the surface of the concrete or masonry wall or floor. Refer to manufacturer's installation guide for details.
- Straight Tape Splice (Optional): Refer to manufacturer's splicing guide & FHIT/FHIT7 System 120 for instructions. Please see American Connector cross-reference charts on pages 21-22.
- Block Splice (Optional): Refer to manufacturer's splicing guide & FHIT/FHIT7 System 120A for instructions. Please see American Connector cross-reference charts on pages 21-22.
- Fused Block Splice & Pigtail Tape Splice (Optional): Refer to manufacturer's splicing guide & FHIT/FHIT7 System 60 for instructions. Please see American Connector cross-reference charts on pages 21-22.

AMERICAN CONNECTOR CROSS-REFERENCE

Connectors manufactured by American Connector must be used for fire rated splices with VITALink® MC/ RC 90 cables in FHIT/FHIT7 Systems 120, 120A, and 60. Refer to the corresponding splicing guide for details.

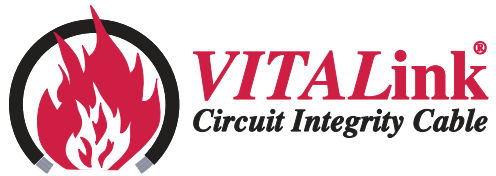
Conductor Size (AWG/kcmil)	RSCC Cable Prefix	Nominal Armor Diameter (in)	Nominal Jacketed Diameter (in)	Cable Connector Part Number "WT-WSE-" Series		Connector Hub Hole Punch Trade Size (in)	Connector Body Diameter (in)
				Non-Jacketed Cable	Jacketed Cable		
1 Conductor							
1/0	VM011X0	1.004	1.107	104-100-S3		1	2
2/0	VM012X0	1.043	1.146	111-100-S3		1	2
3/0	VM031X0	1.075	1.178	111-100-S3		1	2
4/0	VM014X0	1.155	1.258	118-100L-S3		1	2
250	VM01250	1.215	1.318	125-125-S3		1 ¼	2.12
350	VM01350	1.350	1.453	139-125-S3		1 ¼	2.12
400	VM01400	1.410	1.513	148-150-S3		1 ½	2.5
500	VM01500	1.500	1.603	157-150-S3		1 ½	2.5
600	VM01600	1.670	1.793	166-150-S3		1 ½	2.5
750	VM01750	1.729	1.852	175-200-S3		2	3
2 Conductor							
14	VM02014	0.820	0.923	083-075-S3		¾	1.5
12	VM02012	0.820	0.923	083-075-S3		¾	1.5
10	VM02010	0.886	0.989	090-075-S3		¾	1.5
8	VM02008	1.004	1.107	104-100-S3		1	2
6	VM02006	1.075	1.178	111-100-S3		1	2
3 Conductor							
14	VM03014	0.820	0.923	083-075-S3		¾	1.5
12	VM03012	0.886	0.989	090-075-S3		¾	1.5
10	VM03010	0.940	1.043	097-100-S3		1	2
8*	VM03008	1.043	1.146	111-100-S3		1	2
6*	VM03006	1.155	1.258	118-100L-S3		1	2
4*	VM03004	1.235	1.338	125-125-S3		1 ¼	2.12
3*	VM03003	1.299	1.402	132-125-S3		1 ¼	2.12
2*	VM03002	1.410	1.513	148-150-S3		1 ½	2.5
1*	VM03001	1.585	1.708	166-150-S3		1 ½	2.5
1/0*	VM031X0	1.670	1.793	166-150-S3		1 ½	2.5
2/0*	VM032X0	1.795	1.918	184-200-S3		2	3
3/0*	VM033X0	1.915	2.038	193-200-S3		2	3
4/0*	VM034X0	2.038	2.161	213-250NJ-S3	213-250-S3	2 ½	3.75
250*	VM03250	2.258	2.412	235-250-S3		2 ½	3.75
350*	VM03350	2.480	2.634	257-250-S3		2 ½	3.75
400*	VM03400	2.710	2.864	285-300-S3		3	4.5
500*	VM03500	2.820	2.974	285-300-S3		3	4.5
600*	VM03600	3.128	3.302	313-300-S3		3	4.5

*Segmented ground wires available. Contact us for corresponding connector part numbers.

AMERICAN CONNECTOR CROSS-REFERENCE

Connectors manufactured by American Connector must be used for fire rated splices with VITALink® MC/RC 90 cables in FHIT/FHIT7 Systems 120, 120A, and 60. Refer to the corresponding splicing guide for details

Conductor Size (AWG/kcmil)	RSCC Cable Prefix	Nominal Armor Diameter (in)	Nominal Jacketed Diameter (in)	Cable Connector Part Number "WT-WSE-" Series		Connector Hub Hole Punch Trade Size (in)	Connector Body Diameter (in)
				Non-Jacketed Cable	Jacketed Cable		
4 Conductor							
14	VM04014	0.886	0.989	090-075-S3		¾	1.5
12	VM04012	0.940	1.043	097-100-S3		1	2
10	VM04010	1.004	1.107	104-100-S3		1	2
8*	VM04008	1.155	1.258	118-100L-S3		1	2
6*	VM04006	1.215	1.318	125-125-S3		1 ¼	2.12
4*	VM04004	1.350	1.453	139-125-S3		1 ¼	2.12
3*	VM04003	1.410	1.513	148-150-S3		1 ½	2.5
2*	VM04002	1.500	1.603	157-150-S3		1 ½	2.5
1*	VM04001	1.729	1.852	175-200-S3		2	3
1/0*	VM041X0	1.820	1.943	184-200-S3		2	3
2/0*	VM042X0	1.950	2.073	202-200-S3		2	3
3/0*	VM043X0	2.123	2.246	213-250NJ-S3	213-250-S3	2 ½	3.75
4/0*	VM044X0	2.258	2.412	235-250-S3		2 ½	3.75
250*	VM04250	2.460	2.634	257-250-S3		2 ½	3.75
350*	VM04350	2.710	2.864	285-300-S3		3	4.5
400*	VM04400	3.128	3.302	313-300-S3		3	4.5
500*	VM04500	3.128	3.302	313-300-S3		3	4.5
5 Conductor							
14	VM05014	0.940	1.043	097-100-S3		1	2
12	VM05012	1.004	1.107	104-100-S3		1	2
10	VM05010	1.075	1.178	111-100-S3		1	2
8	VM05008	1.215	1.318	125-125-S3		1 ¼	2.12
6	VM05006	1.299	1.402	132-125-S3		1 ¼	2.12
4	VM05004	1.480	1.583	157-150-S3		1 ½	2.5
3	VM05003	1.585	1.708	166-150-S3		1 ½	2.5
2	VM05002	1.670	1.793	166-150-S3		1 ½	2.5
1	VM05001	1.915	2.038	193-200-S3		2	3
1/0	VM051X0	2.038	2.161	213-250NJ-S3	213-250-S3	2 ½	3.75
2/0	VM052X0	2.258	2.412	235-250-S3		2 ½	3.75
3/0	VM053X0	2.460	2.614	257-250-S3		2 ½	3.75
4/0	VM054X0	2.480	2.634	257-250-S3		2 ½	3.75



CONTACT US

330A Turner Street
Attleboro, MA 02703
Toll Free: 800-842-7809

20 Bradley Park Road
East Granby, CT 06026
Toll Free: 800-327-7625

