



Installation Guide For *VitaLink* MC System 120

VITALink[®] MC System 120

UL Listed E38918

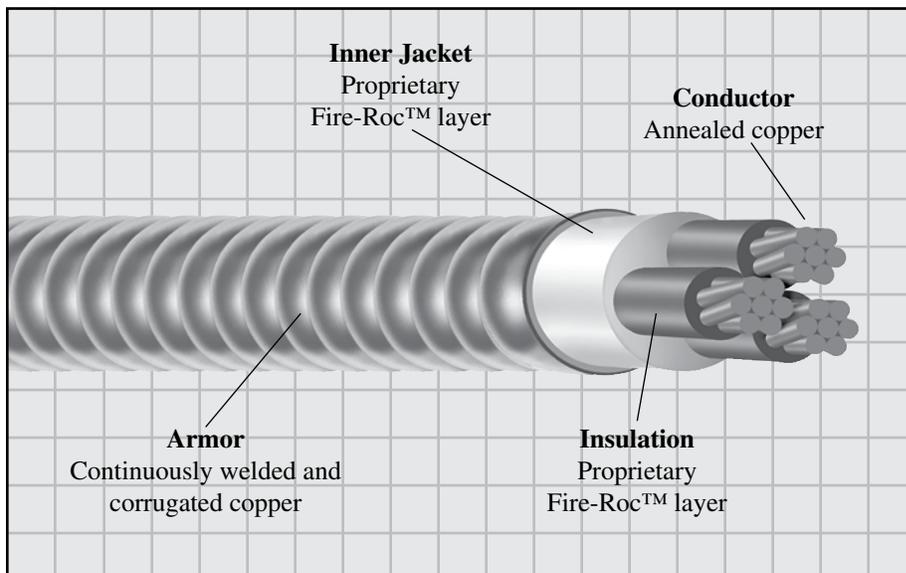
90° C, 600 Volt

NEC Type MC

UL Classified R15365

Fire Resistive Cable

480 Volt



Scope

VITALink[®] MC is a unique cable which offers superior fire endurance capabilities along with the well established benefits & features associated with NEC Type MC cable designs. This cable is specifically designed to meet the circuit integrity requirements in the National Electric Code (NEC), NFPA 72, 130 and 502.

Introduction

The following installation instructions on *VITALink[®] MC* which details the System 120 instructions and the optional use of a junction box at electrical switch gear/equipment. Complete installation information can be found in the RSCC Wire & Cable LLC Installation Manual (Technical Manual 2014). The national electrical code as well as all applicable rules and regulations, including federal, state, local, and municipal laws shall be followed.

Electrical Circuit Integrity System

Electrical Circuit Integrity Systems consist of components and materials that are intended for installation as protection for specific electrical wiring systems, with respect to the disruption of electrical circuit integrity upon exterior fire

exposure. The specifications for the protective system and its assembly are important details in the development of the ratings.

These protective systems are evaluated by the fire exposure and water hose stream test as described in UL 2196 “Test for Fire Resistive Cables”. Ratings apply only to the entire protective system assembly. Individual components and materials are designated for use in a specific system(s) for which corresponding ratings have been developed and are not intended to be interchanged between systems. Ratings are not assigned to individual system components or materials.

Authorities having jurisdiction should be consulted in all cases as to the specific requirements covering the installation and use of these Classified systems.

The following instructions are for the *VITALink[®] MC* UL System No. 120, a 1 hour and 2 hour fire rated system. This cable is only rated at 480 volts (conductor to conductor) when used for a 1 hour or 2 hour fire resistive cable.

These requirements must be followed to maintain the 1 hour and 2 hour rating in a fire rated area.

Terminating VITALink® MC at Electrical Switch Gear/Equipment

A junction box is optional on either end of the fire rated cable in the fire rated room per the following (see Figure 1):

- Once the cable enters the fire rated room, a minimum of 12 inches, terminate the VITALink® MC cable into the appropriate size junction box per the NEC Article 314 (see Table 1). Use a UL listed MC connector suitable for a corrugated copper sheath, a UL listed lock nut and insulating bushing to terminate the cable to the box. Connector should be suitably grounded. Equipment grounding conductors should be carried through and maintained as required.
- Using the appropriate raceway for the specified area, connect the junction box to the equipment.
- Install appropriate wiring between the junction box and the equipment.
- Splice VITALink® MC to the wire using an approved method. Note a transition splice may be required based on ampacity considerations.
- Seal the end of the raceway in the junction box to keep gases from migrating down into the equipment in the case of a fire. This may be done using a pliable compound.

Note 1: All wiring methods and installation procedures shall comply with the National Electrical Code and local amendments.

Note 2: NEC Article 110-14 should be considered in regard to the temperature limit of the wiring to the equipment. The VITALink® MC cable may be sized at 90°C if so desired.

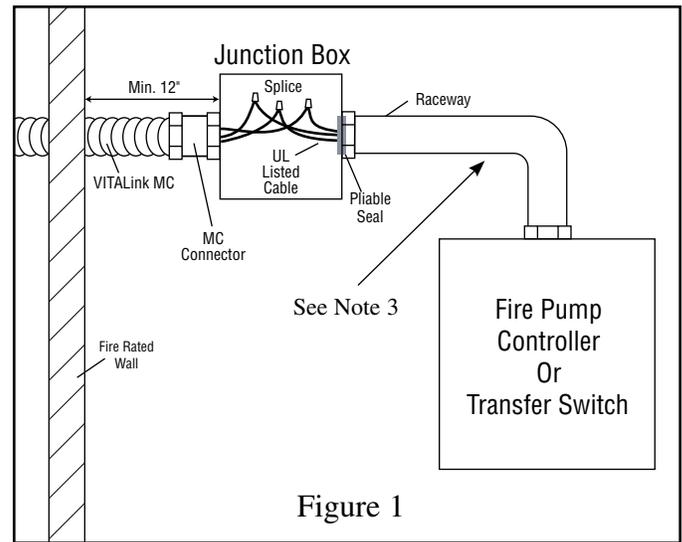


Figure 1

Table 1. Box Size per NEC 314.28

Minimum Box Length for Straight Through Splice					
3/C AWG/Kcmil	Conduit Size	Box Size	4/C AWG/Kcmil	Conduit Size	Box Size
8	1	8	8	1	8
6	1	8	6	1.25	10
4	1.25	10	4	1.25	10
3	1.25	10	3	1.5	12
2	1.25	10	2	1.5	12
1	2	16	1	2	16
1/0	2	16	1/0	2	16
2/0	2	16	2/0	2.5	20
3/0	2	16	3/0	2.5	20
4/0	2.5	20	4/0	2.5	20
250	2.5	20	250	3	24
350	3	24	350	3.5	28
500	3	24	500	3.5	28

Minimum Box Size for Angle Splice					
3/C AWG/Kcm	Conduit Size	Box Size	4/C AWG/Kcm	Conduit Size	Box Size
8	1	6	8	1	6
6	1	6	6	1.25	7.5
4	1.25	7.5	4	1.25	7.5
3	1.25	7.5	3	1.5	9
2	1.25	7.5	2	1.5	9
1	2	12	1	2	12
1/0	2	12	1/0	2	12
2/0	2	12	2/0	2.5	15
3/0	2	12	3/0	2.5	15
4/0	2.5	15	4/0	2.5	15
250	2.5	15	250	3	18
350	3	18	350	3.5	21
500	3	18	500	3.5	21

All conduit and box sizes in inches. Based on flexible metal conduit without a ground wire, and RHW-2 conductor size per the NEC.



Marmon Engineered Wire & Cable LLC
A Berkshire Hathaway Company