

Please see attached
How to test heating cable
Results form

XL IO

https://www.nvent.com/sites/default/files/acquiadam/assets/RAYC_HEM-IM-H58033-XLTraceEdgePFP-EN.pdf

FTC-P Power Connection installation instructions

https://www.nvent.com/sites/default/files/acquiadam/assets/RAYC_HEM-IM-H53514-FTCP-EN.pdf

FTC-P PC power connection install video (not actually FTC-P but very similar)

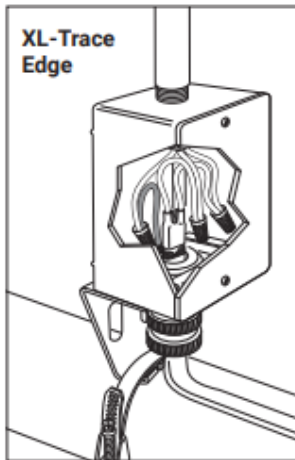
<https://www.youtube.com/watch?v=z2otKcAly2A>

FTC-P end seal install video (not actually FTC-P but very similar)

<https://www.youtube.com/watch?v=FYhOemPveuc>

General heat trace install video (Not XLTrace, different components)

<https://www.youtube.com/watch?v=AFaVGKu3FWY>

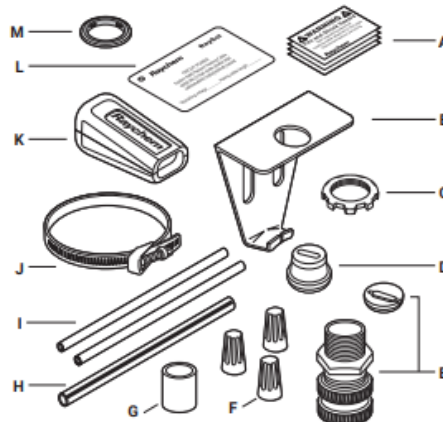


FTC-P

XL-Trace Edge, RaySol, and IceStop Power Connection Kit with End Seal Installation Instructions

KIT CONTENTS

Item	Qty	Description
A	4	Warning labels
B	1	Pipe mounting bracket
C	1	Lock nut
D	1	Blue grommet
E	1	Sealing fitting
F	3	Wire nuts
G	1	Black heat-shrinkable tube (1/2 in x 11/2 in)
H	1	Green/yellow heat-shrinkable tube (1/4 in x 51/2 in)
I	2	Black heat-shrinkable tubes (1/8 in x 51/2 in)
J	1	#3 pipe strap
K	1	Gel-filled end seal (FTC-E)
L	1	RaySol circuit tag
M	1	Sealing gasket



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<https://www.nvent.com/sites/default/files/acquiadam/assets/RAYCHEM-IM-H58033-XLTraceEdgePF-P-EN.pdf>

FTC-HST installation instructions

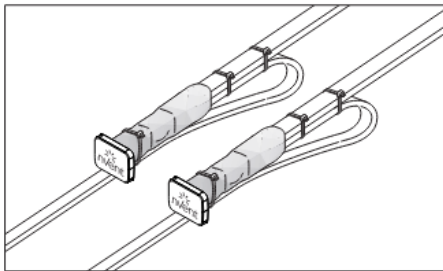
<https://www.nvent.com/sites/default/files/acquiadam/assets/RAYCHEM-IM-H54592-FTCHSTPLUS-E-N.pdf>

General heat trace install video (Not XLTrace, different components)

<https://www.youtube.com/watch?v=AFaVGKu3FWY>

FTC-HST-PLUS

XL-Trace Edge, RaySol, WFP, GM, HWAT and IceStop Splice/Tee Connection Installation Instructions

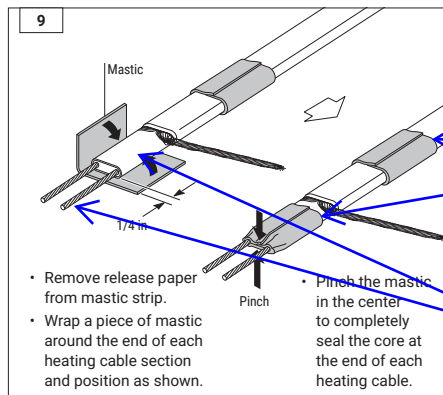
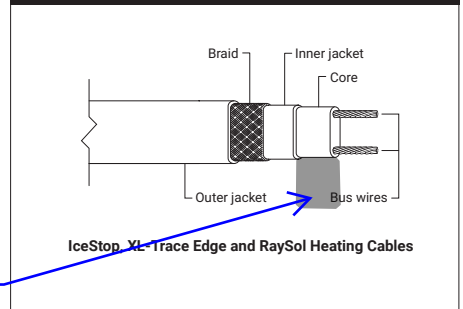


DESCRIPTION

The nVent RAYCHEM FTC-HST-PLUS is for use with heating cables to make splice and tee connections. The kit contains materials for two splice or two tee connections. An nVent RAYCHEM RayClic-E end seal or WHES end seal for nVent RAYCHEM RIM systems is required when using FTC-HST-PLUS as a tee kit. These installation instructions should be used in conjunction with the nVent RAYCHEM XL-Trace Edge, RaySol, WFP, HWAT and IceStop Installation and Operation Manuals. For technical support, contact your nVent representative or call nVent at (800) 545-6258.

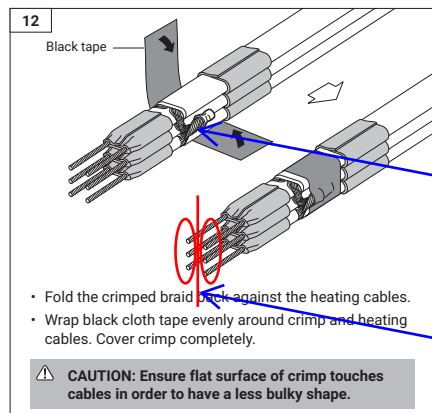
Note that the black core is conductive!

HEATING CABLE CONSTRUCTION



Note that the mastic is for weather protection it is NOT for electrical protection

Be sure to cut back to the 1" and 2" lengths noted

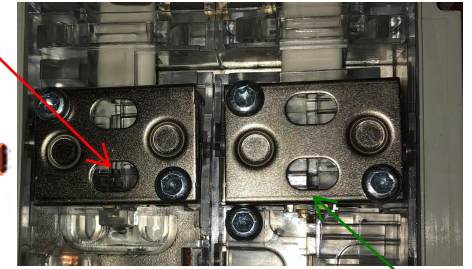
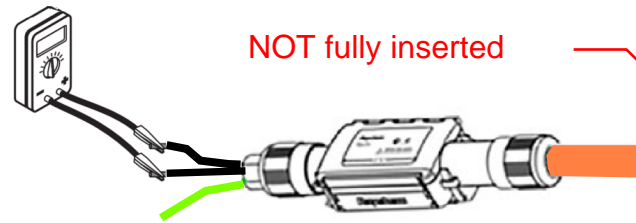


Be sure that all strands of the braid are cleared from the area of the core/bus wire or it will fail the insulation resistance test.

be sure that bus wires don't cross over

"CORE" resistance

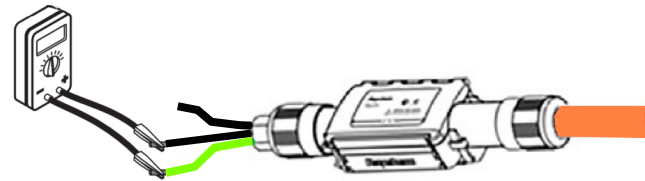
"CORE" resistance is read from Black to Black. This is reading across the heating core and should show 4-150 ohms depending on length and temperature. A longer cable should have a lower core resistance. If the reading is above 300 ohms be sure that the cable is fully inserted into the RayClic. Check the Rayclic screws for tightness. If below 3 ohms check for a bus wire to bus wire short or exceeded maximum circuit length.



You should see white inner jacket all the way into both windows

Capacitance Reading

The capacitance reading can be used to estimate length. The capacitance is read from the bus wire (black) to braid (green). The reading (in nano farads) times the factor (see chart to the right) will give a rough estimate of the heating cable connected length. Note that if the is a bad IR reading the indicated length will be **WRONG** and the you will see a cable length as long as only one bus wire is connected. This should be used as an estimate only.



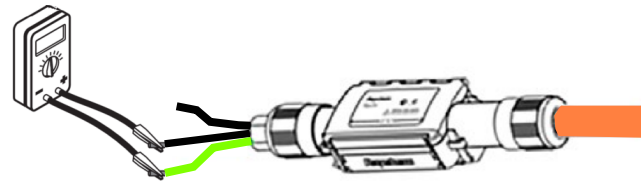
CAPACITANCE FACTORS

Heating cable	Capacitance factor	
	ft/nF	(m/nF)
3XLE	6.7	(2.1)
5XLE and 8XLE	5.0	(1.6)
12XLE	5.8	(1.8)

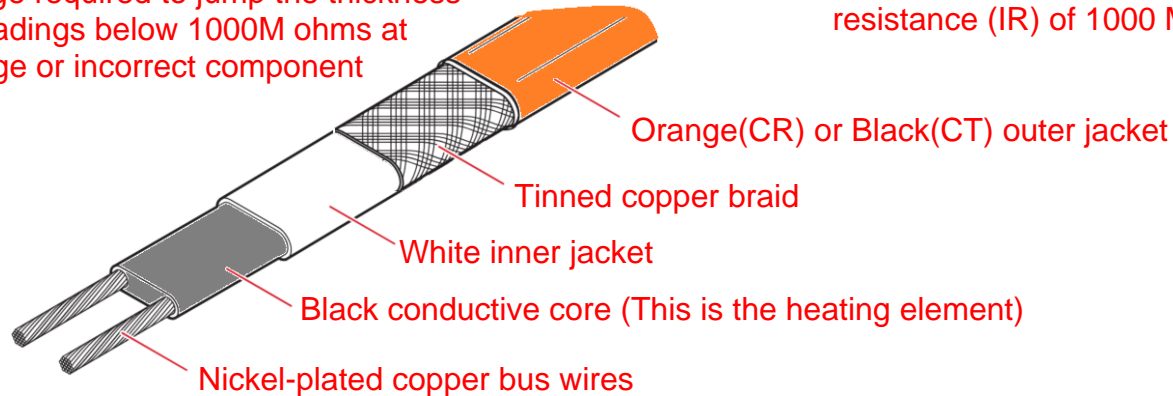
Estimated length = Capacitance reading (in nf) x Capacitance Factor

Insulation Resistance Testing (Meggering)

Insulation resistance testing is the electrical version of pressure testing a pipe. The resistance of the primary jacket is measured from the bus wire (black) to braid (green) at a high voltage to be sure there is no damage. Raychem requires this to be done up to 2500VDC because that is the voltage required to jump the thickness of the primary jacket. Readings below 1000M ohms at 2500VDC indicate damage or incorrect component installation.



Raychem requires a minimum insulation resistance (IR) of 1000 Mega ohms at 2500VDC



TITLE: RAYCHEM XLE IO Testing Diagrams		
SCALE: NONE	DATE: 11/3/22	REV: A



Project

Bus wire to bus wire, ohms

Bus wire to braid, micro farads

Bus wire to braid, mega ohms

insulation resistance minimum passing >1000Mohms at 2500volts

[illegible]