Soldering a Ferrule to a Fiber Optic Cable for Hermetic Sealing

Objective To heat a Kovar ferrule and fiber optic cable to 297°F within 10 seconds for a soldering application, to form a hermetic seal

Material Gold-coated cable, Kovar ferrule, solder and flux

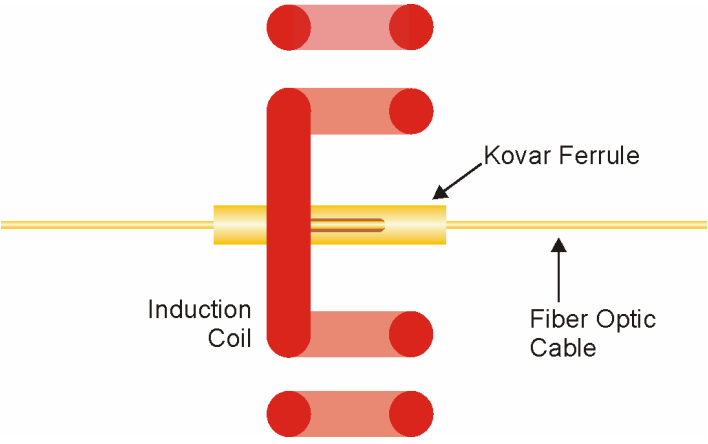
Temperature 297 ºF

Frequency 360 kHz

Equipment Ameritherm 1kW power supply with a specially designed induction coil

Process A specially designed, 4-turn "C" shape coil was used to provide uniform heat to the assembly near the joint area. With this design, the coil can be lowered directly onto the joint; it is not necessary to feed the ferrule assembly through the coil. Flux was applied to the assembly where the ferrule and fiber optic cable were to be joined. RF power was applied for 10 seconds, which caused the solder to melt and flow.

Results/Benefits Consistent and repeatable results were achieved with the Ameritherm 1 kW power supply and a 10-second heat cycle. The solder flowed evenly and bonded the fiber optic cable to the Kovar ferrule. With the induction coil's compact design, a very small surface area was heated with pinpoint accuracy.



Download and print our Applications Lab Process Sheet (http://www.ameritherm.com/PDFs/4110038b.pdf). Answer the questions on the form to help us understand your process and performance requirements. Call with the info on the form to see if you should send us your parts for a free evaluation. If you have questions, call or e-mail us (info@ameritherm.com). We'll be in touch!

