

## A proven solution to safely pass electrical power through wellheads

<b>Three-piece versatility</b>	Surface connector can be easily attached at well completion and easily removed for work-over. The penetrator is retained in the tubing hanger with a separate seal to the bonnet (if present). The downhole connector is field attachable for easy attachment to ESP cable.
<b>Three penetrator styles available</b>	Mini, standard, and maxi sized penetrators offer complete well control for maximum safety.
<b>Field attachable surface and downhole connectors</b>	Use of field attachable connectors minimizes the need for ESP cable splices, when the cable type is known. They can save rig time and minimize cable waste.



EFT™ Penetrator and Lower Connector

The EFT™ Electrical Penetrator System has been safely sealing and passing power through 5,000 psi rated wellheads for over twenty years. With over 10,000 installations, the EFT™ Electrical Penetrator System has proven that it is a workhorse in the ESP market.

The surface connector can be provided in a field attachable kit, configured to your cable preference, making it a quick and flexible, cost-effective option. It can be provided with a cable assembly, with a factory attached length of cable for easy installation at the junction box. The surface connector is also available in a design which is certified for hazardous locations.

The EFT™ Penetrators come in three different sizes, designed to fit your wellhead. The mini, standard and maxi sizes provide the flexibility to meet your ESP completion. All three sizes mate with all EFT™ surface and lower connectors, eliminating the need to carry multiple connector varieties and allows for repeatable installations.

The EFT™ lower connector is provided as a field attachable kit, which eliminates the need for a downhole splice. The lower kit works on all ESP cables and is quick and easy to install.

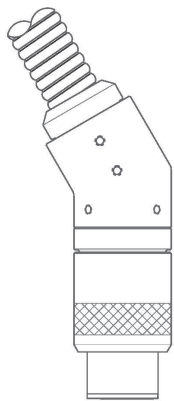
### Specification Chart

	Surface Connector	Penetrator	Lower Connector
<b>Electrical</b>	5 kV, 140 A	5 kV, 140 A	5 kV, 140 A
<b>Temperature</b>		-50°F to 300 °F (-47 °C to 149 °C)	-50°F to 300 °F (-47 °C to 149 °C)
<b>Pressure</b>		5, 000 psi	5, 000 psi
<b>Approvals</b>	Class 1 Div 1 available	Class 1 Div 1 available	

# EFT™ Electrical Penetrator System

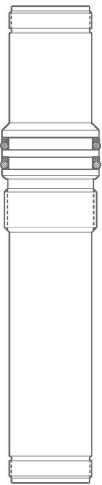


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Surface connectors are supplied as field attachable or as cable assemblies with factory-installed cable.

If desired, surface connectors can be supplied with approvals for use in Class 1 Division 1 Hazardous locations. (Surface connectors with Class 1 Division 1 approvals do not mate with convention EFT penetrators.)



Penetrator are available in three standard sizes (mini, standard, or maxi). Custom lengths are available on request.

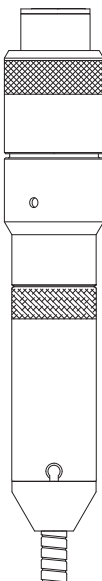
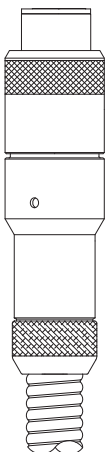
Each is available with a Class 1 Div 1 certification option. (Penetrators with Class 1 Division 1 approvals do not mate with conventional EFT surface connectors.)



Penetrators are designed to match the 5,000 psi pressure capability designed into the wellhead.

Mini-mandrels (12.25-inch length) are used on wellheads not equipped with bonnets. Each have redundant O-ring seals to the hanger for complete reliability.

Standard Mandrels (18.50 inch) and “Maxi-mandrels” (25.37 inch) are used with well-heads that have top flanges (“bonnets”). These longer penetrators each have additional redundant O-rings for sealing to the bonnet.



Lower connectors are supplied as Field Attachable Kits. These connectors can also be supplied with factory terminated cable. Kits are cable-specific. These connectors must always be used with the type of cable for which it was designed.

	Class 1 Div 1 approval	FA Class 1 Div 1	Non-Approved
<b>Surface</b>	EMZ42104-XXX-YYY	EMZ42XXX-R04	301XXX-Kit
<b>Penetrator</b>	PEMZ1530X		M1530X-000
<b>Lower</b>	LC01XXX-Kit	LC01XXX-Kit	LC01XXX-Kit