



EX SERIES

ESP POWER CABLE DATASHEET

V.25

GENERAL INFORMATION

Optimum's EX Series are premium products featuring fluoroplastic insulation with PTFE reinforcement, engineered for high-temperature wells. With a temperature rating of 400°F to 500°F, the EX series delivers exceptional performance in demanding environments.

EX SELECTION GUIDE

Good For

- ✓ Extreme high temperature wells
- ✓ Extreme corrosive environment
- ✓ Environment concerns

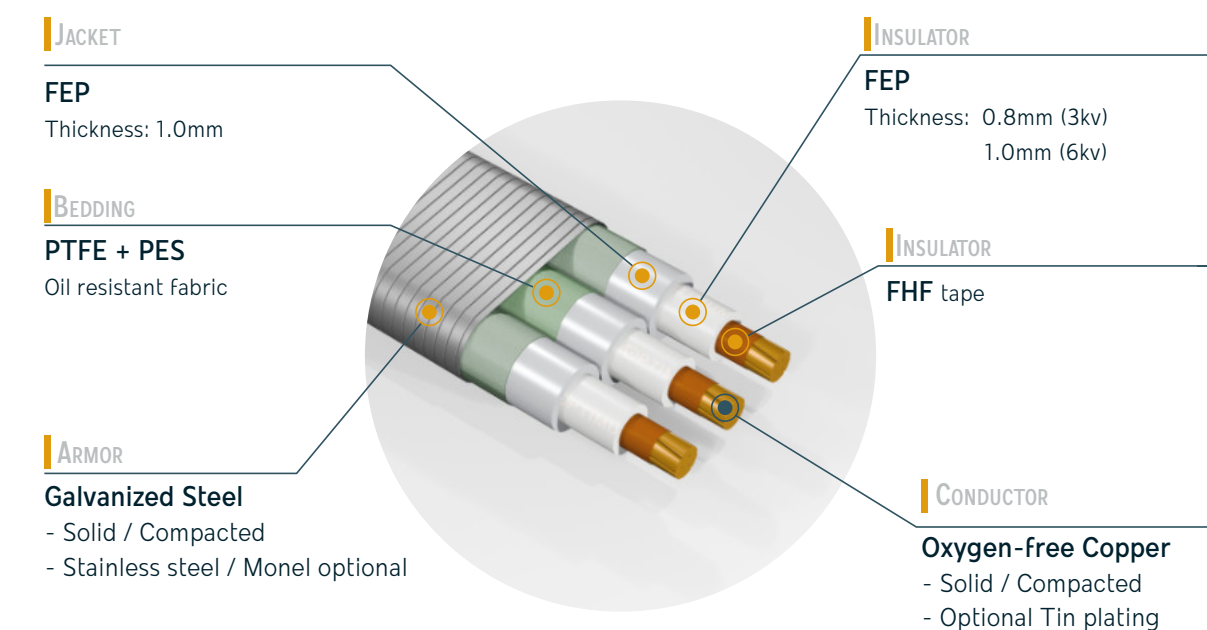
Not Suitable For

- ✗ Extreme mechanically stressed applications

EX PRODUCT LIST

Name	Shape	Insulation	Reinforcement	Temp. Ratings
EX 400F	Flat	FHF + FEP	NBR + PTFE + Fabric Barrier	400F / 204C
EX 450F	Flat	FHF + FEP	PTFE + Fabric Barrier	450F / 232C
EX 450 MLE	Flat	FHF + FEP	PTFE + Fabric Barrier	450F / 232C
EX 500F	Flat	FHF + RFA	PTFE + Fabric Barrier	500F / 260C
EX 500 MLE	Flat	FHF + RFA	PTFE + Fabric Barrier	500F / 260C

EX 450F



DESIGN & CONSTRUCTION

Description	EX-450F ESP power cable with oxygen-free copper conductor, FHF tape and FEP combined insulation, FEP jacket, PTFE + PES oil resistant fabric bedding, fully galvanized steel interlocking armor, flat type.
Temperature Rating	450F / 232C
Voltage Rating	3KV, 6KV
Conductor	Solid drawn bare copper, solid or compacted diameter tolerance ± 1%
Insulation	FHF + FEP - thickness 0.8mm (3KV), 1.0mm (6KV) ± 10%
Jacket	FEP - thickness 1.0mm ± 10%
Bedding	PTFE + PES fabric - oil resistant barrier / cushion
Armor	Fully galvanized steel, interlocking Stainless steel, Monel optional

3KV EX 450F SPECIFICATION

Gauge AWG	Nominal Conductor Dimension		Nominal Cable Dimension		Nominal Cable Weight		Insulation Resistance	Leakage Current	DC Voltage Test 5min
	in	mm	in	mm	lbs/1000F	kg/km	MΩ · km	μA/kmV	kv
5	0.18	4.62	0.4x1	10.5×26	838	1247	5112	0.24	27
4	0.2	5.19	0.4x1.1	11×27.5	954	1419	4660	0.27	27
2	0.26	6.54	0.5x1.2	12.5×31	1264	1881	3905	0.344	27
1	0.29	7.35	0.5x1.3	13.5×34	1476	2196	3585	0.387	27

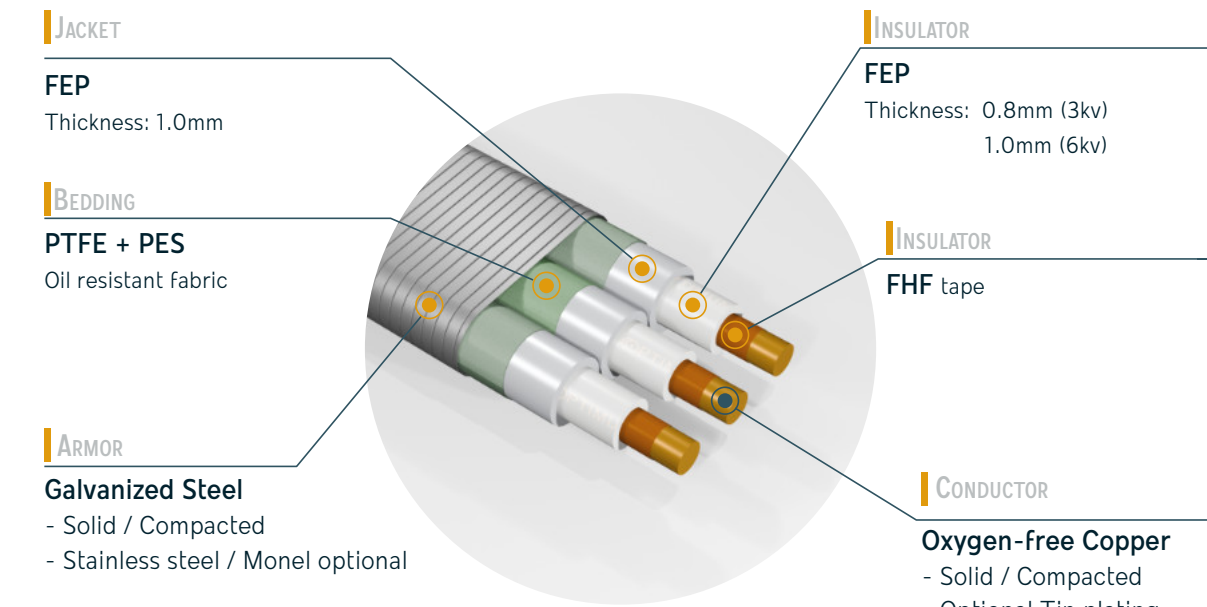
6KV EX 450F SPECIFICATION

Conductor Gauge AWG	Nominal Conductor Diameter		Nominal Cable Dimension		Nominal Cable Weight		Insulation Resistance	Leakage Current	DC Voltage Test 5min
	in	mm	in	mm	lbs/1000F	kg/km	MΩ · km	μA/kmV	kv
5	0.18	4.62	0.4x1.1	11×29	838	1247	5978	0.2	35
4	0.2	5.19	0.5x1.2	12×31	954	1419	5431	0.23	35
2	0.26	6.54	0.5x1.3	12.5×33.5	1264	1881	4516	0.284	35
1	0.29	7.35	0.6x1.48	14×37.5	1476	2196	4129	0.319	35

ADDITIONAL INFO

Standards and Approvals	• IEEE 1018 • API RP 11S 5 • API RP 11S 6
Packaging	Steel corrugated reels with fixed base Protective outside wrapping
Options	Armor - Galvanized steel / Stainless steel / Monel Conductor - Solid Copper / Tin plating
Customization	Capillary Tube Control Wires Marking Tape

EX 450F MLE



DESIGN & CONSTRUCTION

Description	EX-450F MLE ESP power cable with oxygen-free copper conductor, FHF tape and FEP combined insulation, FEP jacket, PTFE + PES oil resistant fabric bedding, fully galvanized steel interlocking armor, low profile flat type for pump connection.
Temperature Rating	450F / 232C
Voltage Rating	3KV, 6KV
Conductor	Solid drawn bare copper, solid diameter tolerance ± 1%
Insulation	FHF + FEP - thickness 0.8mm (3KV), 1.0mm (6KV) ± 10%
Jacket	FEP - thickness 1.0mm ± 10%
Bedding	PTFE + PES fabric - oil resistant barrier / cushion
Armor	Fully galvanized steel, interlocking Stainless steel, Monel optional

3KV EX 450F SPECIFICATION

Gauge AWG	Nominal Conductor Dimension		Nominal Cable Dimension		Nominal Cable Weight		Insulation Resistance	Leakage Current	DC Voltage Test 5min
	in	mm	in	mm	lbs/1000F	kg/km	MΩ · km	μA/kmV	kv
7	0.14	3.67	0.4x0.9	9×23.6	622	926	6177	0.19	27
6	0.16	4.12	0.4x1.0	9.5×26	702	1044	5611	0.22	27
5	0.18	4.62	0.4x1.1	10×27	811	1207	5112	0.24	27
4	0.2	5.19	0.4x1.1	10.5×28.5	926	1378	4660	0.27	27

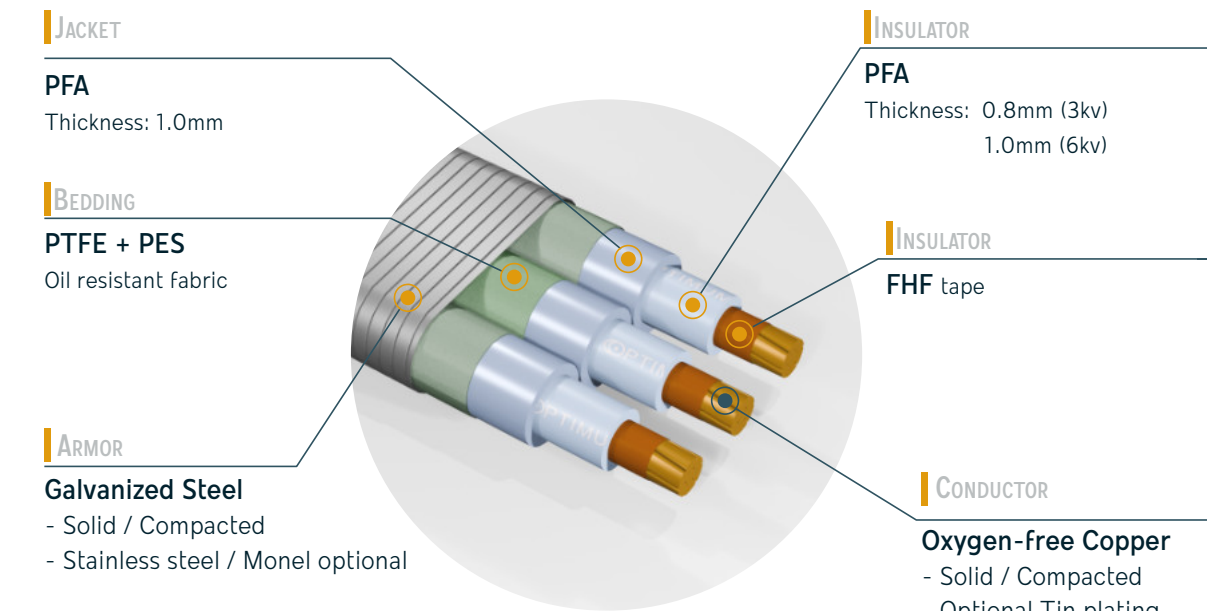
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6	0.16	4.12	0.4x1.1	10×28	702	1044	6583	0.18	35
5	0.18	4.62	0.4x1.2	10.5×29.5	811	1207	4978	0.2	35
4	0.2	5.19	0.4x1.2	11×30.5	926	1378	5431	0.23	35

ADDITIONAL INFO

Standards and Approvals	- IEEE 1018 - API RP 11S 5 - API RP 11S 6
Packaging	Steel corrugated reels with fixed base Protective outside wrapping
Options	Armor - Galvanized steel / Stainless steel / Monel Conductor - Solid Copper / Tin plating
Customization	Capillary Tube Control Wires Marking Tape

EX 500F



DESIGN & CONSTRUCTION

Description	EX-500F ESP power cable with oxygen-free copper conductor, FHF tape and PFA combined insulation, PFA jacket, PTFE + PES oil resistant fabric bedding, fully galvanized steel interlocking armor, flat type.
Temperature Rating	500F / 260C
Voltage Rating	3KV, 6KV
Conductor	Solid drawn bare copper, solid or compacted diameter tolerance ± 1%
Insulation	FHF + PFA - thickness 0.8mm (3KV), 1.0mm (6KV) ± 10%
Jacket	PFA - thickness 1.0mm ± 10%
Bedding	PTFE + PES fabric - oil resistant barrier / cushion
Armor	Fully galvanized steel, interlocking Stainless steel, Monel optional

3KV EX 500F SPECIFICATION

Gauge	Nominal Conductor Dimension		Nominal Cable Dimension		Nominal Cable Weight		Insulation Resistance	Leakage Current	DC Voltage Test 5min
AWG	in	mm	in	mm	lbs/1000F	kg/km	MΩ · km	μA/kmV	kv
5	0.18	4.62	0.4x1	10.5×26	838	1247	5112	0.24	27
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1	0.29	7.35	0.5x1.3	13.5×34	1476	2196	3585	0.387	27

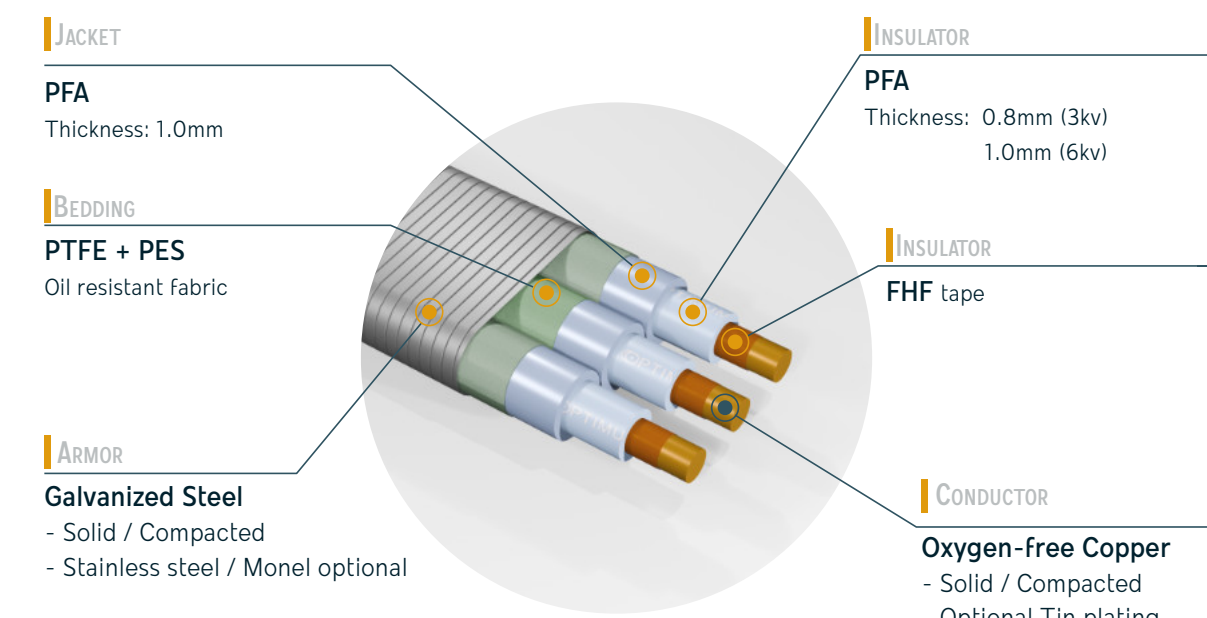
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Conductor Gauge	Nominal Conductor Diameter		Nominal Cable Dimension		Nominal Cable Weight		Insulation Resistance	Leakage Current	DC Voltage Test 5min
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Packaging	Steel corrugated reels with fixed base Protective outside wrapping
Options	Armor - Galvanized steel / Stainless steel / Monel Conductor - Solid Copper / Tin plating
Customization	Capillary Tube Control Wires Marking Tape

EX 500F MLE



DESIGN & CONSTRUCTION

Description	EX-500F MLE ESP power cable with oxygen-free copper conductor, FHF tape and PFA combined insulation, PFA jacket, PTFE + PES oil resistant fabric bedding, fully galvanized steel interlocking armor, low profile flat type for pump connection.
Temperature Rating	500F / 260C
Voltage Rating	3KV, 6KV
Conductor	Solid drawn bare copper, solid diameter tolerance ± 1%
Insulation	FHF + PFA - thickness 0.8mm (3KV), 1.0mm (6KV) ± 10%
Jacket	PFA - thickness 1.0mm ± 10%
Bedding	PTFE + PES fabric - oil resistant barrier / cushion
Armor	Fully galvanized steel, interlocking Stainless steel, Monel optional

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