



Presenting KEI Cables

**EXPERTISE
RUNS
DEEP**

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A vertical silhouette of an oil rig or drilling platform against a dramatic sky transitioning from blue at the top to orange and red at the bottom, suggesting a sunset or sunrise. The rig's structure is complex, with many vertical and horizontal beams and cables visible.

Breadth of Experience

KEI Wires and Cables experts with experience in Oil & Gas, Military, Nuclear and Aerospace applications have joined forces to provide a comprehensive ESP cable portfolio to meet the requirements of every well and are developing the next generation of high reliability power delivery systems.

With decades of specialised Wire and Cable design experience coupled with market leading manufacturing, KEI presents a cable product designed to withstand the challenges of an ESP application, extend system run life and maximise production.

Depth of Portfolio

KEI Cables are high integrity cables that are designed to deliver consistent, clean electrical power to the ESP systems in harsh operating environments, including a range of pressure and temperature ratings, corrosive and gassy wells. Customisable to meet all application needs, KEI products are engineered and manufactured utilising market leading materials, technologies and facilities and undergo a rigorous quality assurance process to ensure they exceed industry standards.



KEI Arteria ESP Power Cables

The KEI Arteria ESP power cable family brings together decades of Wire and Cable engineering, design and manufacturing experience to produce an industry leading Electrical Submersible Pump (ESP) cable that delivers clean and efficient power reducing electrical stresses and maximising ESP run life.

Customised cable design to maximise service life in all applications.

KEI offers over 700 possible design options to ensure that every cable is configurable to the specific application requirements. Designed and tested to IEEE specifications, KEI Cables deliver reliability in harsh down-hole environments and feature dual layer insulation with primary and secondary barriers that allow for superior performance at service temperature and enhanced environmental protection.

Additional options include variable thickness, lead sheathing, heavy or double layer armour, and upon request, single or double integrated capillary tube(s). Protected within the cable armour, the CT allows for continuous chemical injection and simplifies the installation process, reducing the risk of damage while running into the well. A similarly constructed instrumentation and control line option for additional monitoring and completion tools can also be provided.

KEI provide five power cable product lines, each series rated to 5kV, available in round or flat configuration, in a range of conductor gauge sizes.



Cable Code	Cable Rating	Profile	Insulation	Barrier	Jacket	Armour	Voltage, kV
1F180 – PPG	180 (82)	Flat	PP	None	None	Galvanised steel	5
1R180 – PPG		Round	PP	None	PE	Galvanised steel	5
2F205 – PEG	205 (96)	Flat	PP	No	EPDM	Galvanised steel	5
2R205 – PEG		Round	PP	No	EPDM	Galvanised steel	5
3F290 – EEG	290 (143)	Flat	EPDM	EPDM	None	Galvanised steel	5
3R290 – EEG		Round	EPDM	None	EPDM	Galvanised steel	5
4F400 – EFG	400 (204)	Flat	EPDM	Fluoropolymer	None	Galvanised steel	5
4R400 – EFEG		Round	EPDM	Fluoropolymer	EPDM	Galvanised steel	5
4F400 – EFLG	400 (204)	Flat	EPDM	Lead	None	Galvanised steel	5
4R400 – ELEG		Round	EPDM	Lead	EPDM	Galvanised steel	5
5F450 – ELG	450 (232)	Flat	EPDM	Lead	None	Galvanised steel	5
5R450 – ELEG		Round	EPDM	Lead	EPDM	Galvanised steel	5
5F450 – KEFLG	450 (232)	Flat	Polyimide	Fluoropolymer	None	Galvanised steel	5
			EPDM	Lead			
5R450 – KEFLEG	450 (232)	Flat	Polyimide	Fluoropolymer	EPDM	Galvanised steel	5
			EPDM	Lead			
5F450 – KEFLG-CT	450 (232)	Flat	Polyimide	Fluoropolymer	Yes	Galvanised steel	5
			EPDM	Lead			
6F450 – KEFLM	450 (232)	Flat	Polyimide	Fluoropolymer	Yes	Monel	5
			EPDM	Lead			

* Materials and specifications are subject to change without notice

Arteria ESP Systems Cables Nomenclature



Example

KEI

4R400

2/05

A

KEI Cables

Cable Application Reference

Well code = 4

Flat cable = F

Round cable = R

MLE = M

Max cable temp. (°F) = 400

Conductor

Size AWG/ = 2/

Solid = 1

Stranded, 8% compaction = 2

Stranded, 5% compaction = 3

Stranded, 3% compaction = 4

Stranded, 0% compaction = 5

Conductor Coating

Plain/bare = A

Tinned B

Lead alloy = C

EF**E****GS****5****XX****Customer Specific Options**

CT Capillary tube 2CT=2 off Capillary tubes
OSC-XX-Oversized conductor
(XX denotes dimension)
OSA-XX-Oversized armour
(XXX denotes dimension)
DA Double Armour

Voltage Rating

5 = 5kV

Metallic Armour

GS Galvanised steel
SS Stainless steel
MNL = Monel

Jacket

PP = Polypropylene
PE Polyethylene
E = EPDM
EL EPDM + lead
N = Nitrile

Insulation

PP Polypropylene
E = EPDM
EF = EPDM + fluoropolymer phase jacket
KEF = Kapton + EPDM + fluoropolymer phase jacket
N = Nitrile

Arteria 180 Power Cables

APPLICATIONS :

Light duty

Shallow water wells

Low gas and oil vapor wells

KEY FEATURES :

Copper pacified polypropylene insulation

Polyethelene collective jacket on round cable

Thermo-mechanical tape/braid on each phase

Galvanised steel interlocking armour

Increased zinc coating to protect against corrosion



Arteria Flat 180F – PG

KV Rating	Conductor Size	Overall Dimension		Weight Per	
		Inch	mm	Lb/Ft.	Kg/M
5	6 – 1	0.505 x 1.196	12.83 x 30.37	0.76	1.14
5	4 – 1	0.548 x 1.323	13.91 x 33.59	0.96	1.43
5	2 – 1	0.601 x 1.482	15.26 x 37.65	1.03	1.53
5	1 – 1	0.633 x 1.578	16.07 x 40.07	1.45	2.16



Arteria Round 180F – PPG

KV Rating	Conductor Size	Overall Dimension		Weight Per	
		Inch	mm	Lb/Ft.	Kg/M
5	6 – 1	1.061	26.96	0.90	1.40
5	4 – 1	1.153	29.28	1.10	1.70
5	2 – 1	1.268	32.20	1.50	2.20
5	1 – 1	1.336	33.94	1.70	2.60



NOTES

Dimensions as per IEEE 1017/18/19 standards but can be designed to customer specifications | 1 inch = 25.40 millimetres | 1 pound per foot = 1.488 kilograms per metre | All finished dimensions are nominal | Materials and specifications are subject to change without notice | Stranded conductors will be supplied on request | Flat cable construction has 0.020" thickness, galvanised steel armour | Round cable construction has 0.025" thickness, galvanised steel armour



Arteria 205 Power Cables

APPLICATIONS :

General duty
Shallow sweet oil wells
Low corrosion

KEY FEATURES :

Copper pacified polypropylene insulation
EPDM jacket on flat cable and collective jacket on round cable
Thermo-mechanical tape/braid on each phase
Galvanised steel interlocking armour
Increased zinc coating to protect against corrosion

Arteria Flat 205F – PEG

KV Rating	Conductor Size	Overall Dimension		Weight Per	
		Inch	mm	Lb/Ft.	Kg/M
5	6 – 1	0.605 x 1.496	15.37 x 37.99	0.91	1.36
5	4 – 1	0.648 x 1.623	16.45 x 41.22	1.12	1.67
5	2 – 1	0.701 x 1.782	17.81 x 45.26	1.20	1.78
5	1 – 1	0.733 x 1.878	18.62 x 47.7	1.63	2.43



Arteria Round 205F – PEG

KV Rating	Conductor Size	Overall Dimension		Weight Per	
		Inch	mm	Lb/Ft.	Kg/M
5	6 – 1	1.061	26.96	0.85	1.05
5	4 – 1	1.153	29.28	1.06	1.14
5	2 – 1	1.268	32.20	1.36	1.26
5	1 – 1	1.336	33.94	1.57	1.34



NOTES

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Arteria 290 Power Cables

APPLICATIONS :

Moderate duty
Increased well depth & temperature
Increased gas and oil vapour
Increased corrosion

KEY FEATURES :

EPDM insulation and jacket
Thermo-mechanical tape/braid on each phase
Galvanised steel interlocking armour
Increased zinc coating to protect against corrosion



Arteria Flat 290F – EEG

KV Rating	Conductor Size	Overall Dimension		Weight Per	
		Inch	mm	Lb/Ft.	Kg/M
5	6 – 1	0.608 x 1.503	15.43 x 38.17	0.97	1.45
5	4 – 1	0.65 x 1.63	16.51 x 41.4	1.18	1.76
5	2 – 1	0.703 x 1.799	17.86 x 45.68	1.27	1.89
5	1 – 1	0.735 x 1.884	18.67 x 47.87	1.71	2.54



Arteria Round 290F – EEG

KV Rating	Conductor Size	Overall Dimension		Weight Per	
		Inch	mm	Lb/Ft.	Kg/M
5	6 – 1	1.061	26.96	0.85	1.05
5	4 – 1	1.153	29.28	1.06	1.14
5	2 – 1	1.268	32.20	1.36	1.26
5	1 – 1	1.336	33.94	1.57	1.34



NOTES

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Arteria 400 Power Cables

APPLICATIONS :

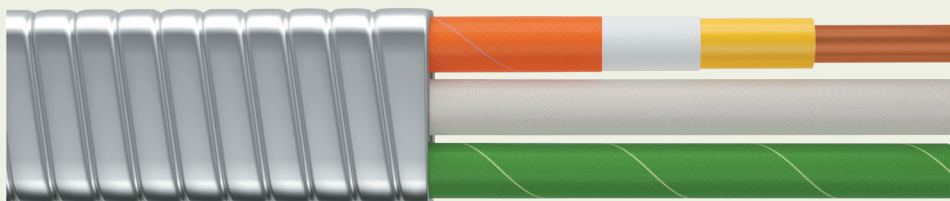
- Enhanced duty
- Increased well depth & temperature
- Increased gas and oil vapour
- Increased corrosion

KEY FEATURES :

- EPDM insulation
- Dual layer insulation – fluoropolymer barrier
- Thermo-mechanical tape/braid on each phase
- Galvanised steel interlocking armour
- Increased zinc coating to protect against corrosion

Arteria Flat 400F – EFG

KV Rating	Conductor Size	Overall Dimension		Weight Per	
		Inch	mm	Lb/Ft.	Kg/M
5	6 – 1	0.505 x 1.196	12.823 x 30.38	0.97	1.45
5	4 – 1	0.548 x 1.323	13.92 x 33.60	1.19	1.77
5	2 – 1	0.601 x 1.482	15.27 x 37.64	1.50	2.23
5	1 – 1	0.633 x 1.578	16.08 x 40.08	1.71	2.54



Arteria Round 400F – EFEG

KV Rating	Conductor Size	Overall Dimension		Weight Per	
		Inch	mm	Lb/Ft.	Kg/M
5	6 – 1	1.061	26.96	1.26	1.87
5	4 – 1	1.153	29.28	1.49	2.21
5	2 – 1	1.268	32.20	1.82	2.71
5	1 – 1	1.336	33.94	2.05	3.05



NOTES

Dimensions as per IEEE 1017/18/19 standards but can be designed to customer specifications | 1 inch = 25.40 millimetres | 1 pound per foot = 1.488 kilograms per metre | All finished dimensions are nominal | Materials and specifications are subject to change without notice | Stranded conductors will be supplied on request | Flat cable construction has 0.020" thickness, galvanised steel armour | Round cable construction has 0.025" thickness, galvanised steel armour

Arteria 400 Power Cables

APPLICATIONS :

Enhanced duty
Increased well depth & temperature
Increased gas and oil vapour
Increased corrosion

KEY FEATURES :

Lead sheath
Thermo-mechanical tape/braid on each phase
Galvanised steel interlocking armour
Increased zinc coating to protect against corrosion



Arteria Flat 400F – ELG

KV Rating	Conductor Size	Overall Dimension		Weight Per	
		Inch	mm	Lb/Ft.	Kg/M
5	6 – 1	0.552 x 1.337	14.02 x 33.96	1.25	1.87
5	4 – 1	0.595 x 1.464	15.11 x 37.19	1.42	2.12
5	2 – 1	0.648 x 1.624	16.46 x 41.25	1.79	2.67
5	1 – 1	0.68 x 1.72	17.27 x 43.69	2.02	3.01



Arteria Round 400F – ELEG

KV Rating	Conductor Size	Overall Dimension		Weight Per	
		Inch	mm	Lb/Ft.	Kg/M
5	6 – 1	1.163	29.54	1.26	1.87
5	4 – 1	1.255	31.86	1.49	2.21
5	2 – 1	1.370	34.79	1.82	2.71
5	1 – 1	1.438	36.53	2.05	3.05



NOTES

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Arteria 450 Power Cables

APPLICATIONS :

- Severe duty
- Deep oil wells
- High temperature and corrosion
- Hydrogen Sulfide (H₂S) wells

KEY FEATURES :

- Lead sheath
- Thermo-mechanical tape/braid on each phase
- Galvanised steel interlocking armour
- Increased zinc coating to protect against corrosion

Arteria Flat 450F – ELG

KV Rating	Conductor Size	Overall Dimension		Weight Per	
		Inch	mm	Lb/Ft.	Kg/M
5	6 – 1	0.552 x 1.337	14.02 x 33.96	1.25	1.87
5	4 – 1	0.595 x 1.464	15.11 x 37.19	1.42	2.12
5	2 – 1	0.648 x 1.624	16.46 x 41.25	1.79	2.67
5	1 – 1	0.68 x 1.72	17.27 x 43.69	2.02	3.01



Arteria Round 450F – ELEG

KV Rating	Conductor Size	Overall Dimension		Weight Per	
		Inch	mm	Lb/Ft.	Kg/M
5	6 – 1	1.163	29.54	1.26	1.87
5	4 – 1	1.255	31.86	1.49	2.21
5	2 – 1	1.370	34.79	1.82	2.71
5	1 – 1	1.438	36.53	2.05	3.05



NOTES

Dimensions as per IEEE 1017/18/19 standards but can be designed to customer specifications | 1 inch = 25.40 millimetres | 1 pound per foot = 1.488 kilograms per metre | All finished dimensions are nominal | Materials and specifications are subject to change without notice | Stranded conductors will be supplied on request | Flat cable construction has 0.020" thickness, galvanised steel armour | Round cable construction has 0.025" thickness, galvanised steel armour

Arteria 450 Power Cables

APPLICATIONS :

Severe duty
Deep oil wells
High temperature and corrosion
Hydrogen Sulfide (H₂S) wells

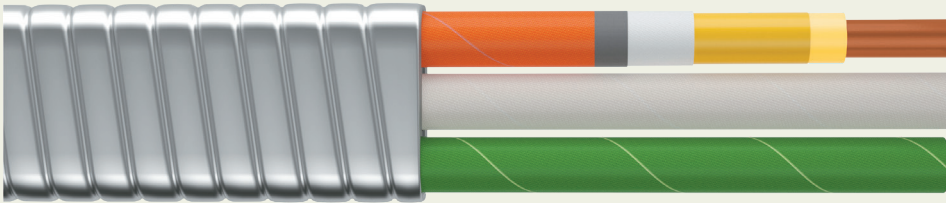
KEY FEATURES :

Polyimide tape wrap on conductor
Dual layer insulation – EPDM and fluoropolymer barrier
Lead sheath
Thermo-mechanical tape/braid on each phase
Galvanised steel interlocking armour
Increased zinc coating to protect against corrosion



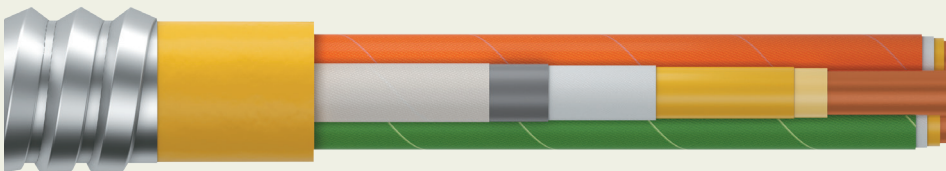
Arteria Flat 450F – KEFLG

KV Rating	Conductor Size	Overall Dimension		Weight Per	
		Inch	mm	Lb/Ft.	Kg/M
5	6 – 1	0.566 x 1.378	14.38 x 35.00	1.25	1.87
5	4 – 1	0.608 x 1.51	15.44 x 38.35	1.42	2.12
5	2 – 1	0.662 x 1.665	16.82 x 42.29	1.79	2.67
5	1 – 1	0.693 x 1.76	17.60 x 44.70	2.02	3.01



Arteria Round 450F – KEFLEG

KV Rating	Conductor Size	Overall Dimension		Weight Per	
		Inch	mm	Lb/Ft.	Kg/M
5	6 – 1	1.215	30.86	2.00	2.90
5	4 – 1	1.306	33.18	2.30	3.40
5	2 – 1	1.422	36.11	2.80	4.00
5	1 – 1	1.490	37.84	3.10	4.60



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Arteria 450 Power Cables

APPLICATIONS :

ESP applications requiring chemical treatment
Severe duty
Deep oil wells
High temperature and corrosion
Hydrogen Sulfide (H₂S) wells

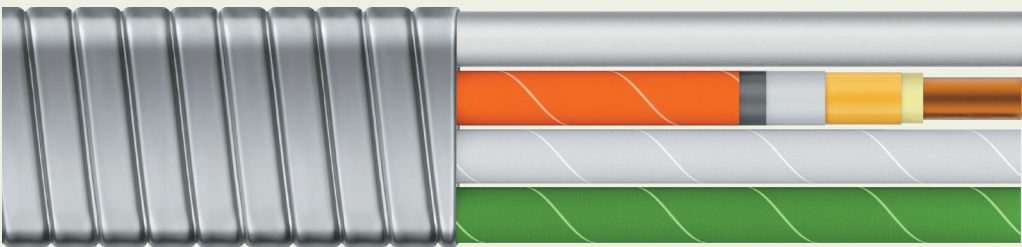
KEY FEATURES :

3/8" capillary tube (SS316L)
Polyimide tape wrap on conductor
Dual layer insulation – EPDM and fluoropolymer barrier
Lead sheath
Thermo-mechanical tape/braid on each phase
Galvanised steel interlocking armour
Increased zinc coating to protect against corrosion
Can be designed based on application requirement



Arteria Flat 450F – KEFLG-CT

KV Rating	Conductor Size	Overall Dimension		Weight Per	
		Inch	mm	Lb/Ft.	Kg/M
5	6 – 1	0.566 x 1.753	14.38 x 44.53	0.97	1.45
5	4 – 1	0.608 x 1.88	0.608 x 47.75	1.18	1.76
5	2 – 1	0.662 x 2.04	0.662 x 51.81	1.27	1.89
5	1 – 1	0.693 x 2.135	0.693 x 54.23	1.71	2.54



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Arteria Motor Lead Extension

APPLICATIONS :

Severe duty
Deep oil wells
High temperature and corrosion
Hydrogen Sulfide (H₂S) wells

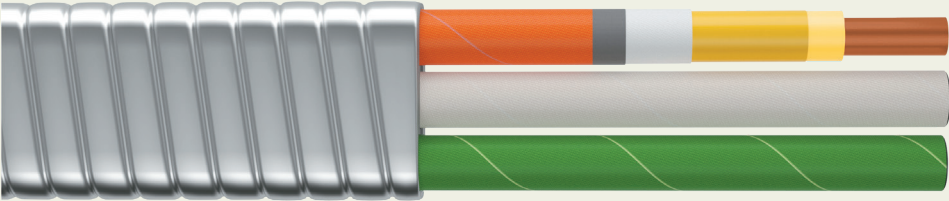
KEY FEATURES :

Polyimide tape wrap on conductor
Dual layer insulation – EPDM and fluoropolymer barrier
Lead sheath
Thermo-mechanical tape/braid on each phase
Monel interlocking armour



Arteria Flat MLE 450F – KEFLM

KV Rating	Conductor Size	Insulation Thickness		Barrier Thickness		Insulated/ Jacketed phase Diameter		Overall Dimension		Length		Weight Per	
		Inch	mm	Inch	mm	Inch	mm	Inch	mm	Ft	Mtr	Lbs	Kgs
5	6 – 1	0.0748	1.90	0.038	0.96	0.387	9.83	0.507 x 1.282	12.88 x 32.56	100	30.5	109	49.4
5	4 – 1	0.0748	1.90	0.038	0.96	0.430	10.91	0.55 x 1.409	13.97 x 35.79	100	30.5	134	60.7
5	2 – 1	0.0748	1.90	0.038	0.96	0.483	12.26	0.603 x 1.57	15.31 x 39.88	100	30.5	168	76.4



NOTES
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www.kei-ind.com





KEI Industries Limited
D-90, Okhla Industrial Area Phase-I,
New Delhi-110020, India.
Tel : +91-11-26818840 / 8642 / 0242
Fax: +91-11-26817225, +91-11-26811959
e-mail : IBD@kei-ind.com
Website: www.kei-ind.com