



LUTZE DRIVEFLEX[®] VFD Cables for Pump and Water System Applications

LUTZE DRIVEFLEX® Cables for Pump Applications

DRIVEFLEX® Cables Protect Pump Motors on VFD Systems

LUTZE is a leading manufacturer of variable frequency drive (VFD) cables. As one of the first to develop a specialized VFD cable, LUTZE has years of experience with optimizing and protecting critical equipment that utilize VFD technologies. As pumping applications increasingly adopt VFDs as a method to improve efficiency, LUTZE is committed to bringing its expertise in VFD cabling and installation to the pumping industry to address common cable and motor failures.

Although VFDs provide great benefits for increasing efficiency and precisely controlling flow rates, they are responsible for many common cable and motor failures. VFDs produce harmful voltage spikes and electrical noise that can result in damaged equipment, nuisance tripping, reduced efficiency, and costly downtime. Using VFD cables engineered for these applications mitigate such issues and ensure reliable operation.



Why pumps need VFD cable?

Long cable runs commonly seen in pumping applications amplify electrical issues caused by VFDs, such as reflective waves and high charging currents. Wet environments also negatively affect the electrical performance of commonly used insulations, such as PVC. Without the proper cabling, these issues can cause failures and damage motors leading to downtime even when corrective filters are being used. DRIVEFLEX® VFD cables are designed to mitigate these issues making them ideal for reliable VFD and pump operation. Now DRIVEFLEX® Hydro brings the benefits of a VFD cable to submersible pumps installed in wells.



LUTZE DRIVEFLEX® Cables for Pump Applications

All DRIVEFLEX® VFD cables are extremely flexible, easy to pull, route and terminate. These cables are engineered with XLPE insulation to reduce voltage spikes and provide a high level of voltage breakthrough resistance. The low capacitance design minimizes inrush current and nuisance tripping. Rugged materials ensure resistance to harsh environments including wet locations. Approvals such as TC-ER and Direct Burial provide ratings for crush resistance and exposed installation.

DRIVEFLEX® A106/A216/A220 SERIES



- Intended for industrial and commercial pumps connected to VFDs
- Shielded for noise and interference protection
- Ideal for municipal pump motors in water and wastewater applications

DRIVEFLEX® HYDRO A110 SERIES



- Designed for down-well submersible pump applications using VFDs
- Unshielded low capacitance design
- Water blocking tape prevents water ingress & transmission
- Ideal for isolated pumps and long cable runs

LUTZE DRIVEFLEX® HYDRO XLPE PVC, Unshielded

Flexible VFD Cable XHHW-2 for Submersible Pump and Stationary Applications



Application

- Motor cable designed for harsh down-well environments and wet operating conditions
- Motor supply cable to connect power to 3-phase motors, VFDs and servo drives
- Thermoset XLPE insulation offering superior overload and short-circuit temperature
- Type XHHW-2 insulation offering smaller ODs for submersible pump and special VFD applications
- Compliant with NFPA 79 requirements
- TC-ER-JP for use with cable trays without conduit, which can reduce installation costs in industrial environments
- WTTC – wind turbine tray cable rating for use in wind power generation
- Dry, damp or wet conditions

Characteristics

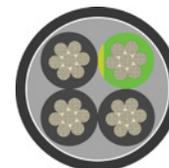
- Flexible XLPE conductor design
- Water blocking separator tape for increased water ingress protection
- Reduced cable ODs
- High insulation resistance
- Low capacitance cable
- Oil resistant jacket designed for easy stripping
- Non-wicking fillers
- Crush impact resistant
- Gas/vapor-tight sheath per UL 1277
- Sunlight resistant
- Flame retardant
- Direct burial

Technical Data

Voltage	600V 90C TC-ER 1000V 90C Flexible VFD Servo Cable 1000V 90C WTTC 1000V 105C AWM (≤ AWG2)
Temperature range	-40°C - +90/105°C static
Bending radius min	4 x cable OD
Conductor marking	Black with white numbers and one green/yellow ground
Oil resistance	Oil Res II
Approvals	UL Type Flexible Motor Supply, Flexible VFD Servo Cable, TC-ER, WTTC, DP-1 (≤ AWG2) Meets NEC 336, 392 Class I & II, Div. 2 and Class I Zone 2 per NEC 501, 502, 505 AWM 20886 (≤ AWG2) Submersible Pump c(UL) TC, CIC FT4 UL 1277 RoHS, REACH, TSCA

Construction

- AWG conductor
- Flexible fine wire stranded tinned copper conductors for improved electrical characteristics and reduced oxidation
- Thermoset XLPE insulation type XHHW-2, Wet/Dry
- Water blocking separator tape
- Oil resistant PVC jacket
- Black jacket similar to RAL 9005



Part No.	Description No. of conductors incl. ground	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
A1101404	AWG14/04C (41/30)	11.4	0.450	118	51
A1101204	AWG12/04C (65/30)	12.7	0.500	162	84
A1101004	AWG10/04C (105/30)	15.6	0.615	254	130
A1100804	AWG8/04C (168/30)	20.2	0.795	407	214
A1100604	AWG6/04C (266/30)	23.4	0.920	600	339
A1100404	AWG4/04C (420/30)	27.0	1.060	842	527
A1100204	AWG2/04C (672/30)	31.5	1.240	1263	874
A1100104	AWG1/04C (840/30)	33.1	1.304	1505	1068
A1101/004	1/0/04C (1064/30)	35.6	1.400	1835	1363
A1102/004	2/0/04C (1344/30)	38.6	1.520	2228	1708
A1103/004	3/0/04C (1664/30)	41.8	1.644	2651	2064
A1104/004	4/0/04C (2052/30)	47.9	1.887	3378	2606

“Water blocking separator tape reduces the risk of water transmission and wicking through the cable when installed in wet and submerged environments.”



Specifications are subject to change without prior notice

LUTZE DRIVEFLEX® XLPE (C) PVC, Shielded

Flexible VFD Cable XHHW-2 for Stationary Applications



Application

- Dual-shielded motor supply cable to connect power to 3-phase motors, VFDs and servo drives
- Cable design for harsh industrial environments and operating conditions with high noise levels
- Thermoset XLPE insulation offering superior overload and short-circuit temperature
- Type XHHW-2 insulation offering smaller ODs for general VFD applications
- Compliant with NFPA 79 requirements
- TC-ER-JP for use with cable trays without conduit, which can reduce installation costs in industrial environments
- WTTC – wind turbine tray cable rating for use in wind power generation
- Dry, damp or wet conditions

Characteristics

- Flexible XLPE conductor design
- Reduced cable ODs
- High insulation resistance
- Low capacitance cable
- Effective dual layer shield for EMC compliance
- Oil resistant jacket designed for easy stripping
- Non-wicking fillers
- Crush impact resistant
- Gas/vapor-tight sheath per UL 1277
- Sunlight resistant
- Flame retardant
- Direct burial
- Talc and silicone free

Technical Data

Voltage	600V 90C TC-ER-JP 1000V 90C Flexible VFD Servo Cable 1000V 90C WTTC 1000V 105C AWM
Temperature range	-40°C - +105°C static
Bending radius min	6 x cable OD
Conductor marking	Black with white numbers and one green/yellow ground
Oil resistance	Oil Res II
Approvals	UL Type Flexible Motor Supply, Flexible VFD Servo Cable, TC-ER-JP, WTTC, DP-1 Meets NEC 336, 392 Class I & II, Div. 2 and Class I Zone 2 per NEC 501, 502, 505 AWM 20886 Submersible Pump (≥ AWG14) c(UL) TC, CIC FT4 UL 1277 RoHS, REACH

Construction

- AWG conductor
- Flexible fine wire stranded tinned copper conductors for improved electrical characteristics and reduced oxidation
- Thermoset XLPE insulation type XHHW-2, Wet/Dry
- Shielded with foil tape, tinned copper braid with 80% optical coverage, and drain wire
- Oil resistant PVC jacket
- Black jacket similar to RAL 9005



Part No.	Description No. of conductors incl. ground	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
A1061804	AWG18/04C (19/30)	10.5	0.415	108	42
A1061604	AWG16/04C (26/30)	10.8	0.425	124	54
A1061404	AWG14/04C (41/30)	11.6	0.456	154	76
A1061204	AWG12/04C (65/30)	13.0	0.51	208	118
A1061004	AWG10/04C (105/30)	16.5	0.650	320	183
A1060804	AWG8/04C (168/30)	20.6	0.81	478	279

“Small diameter general purpose VFD cable for applications with space restrictions such as conduit installations”.
Meets NFPA 79, article 4.4.2.8.



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LUTZE DRIVEFLEX® XLPE (C) PVC, Shielded

Flexible VFD Cable Type RHW-2 for Stationary Applications



Application

- Dual-shielded motor supply cable to connect power to 3-phase motors, VFDs and servo drives
- Cable design for harsh industrial environments and operating conditions with high noise levels
- Thermoset XLPE insulation offering superior overload and short-circuit temperature
- Increased wall thickness insulation type RHW-2, offering lower capacitance and higher impedance making it ideal for applications with high voltage spikes and long cable runs
- Compliant with NFPA 79 requirements
- TC-ER-JP for use with cable trays without conduit, which can reduce installation costs in industrial environments
- WTTC – wind turbine tray cable rating for use in wind power generation
- Dry, damp or wet conditions

Characteristics

- Flexible XLPE conductor design
- High insulation resistance
- Low capacitance cable
- Effective dual layer shield for EMC compliance
- Oil resistant jacket designed for easy stripping
- Non-wicking fillers
- Crush impact resistant
- Gas/vapor-tight sheath per UL 1277
- Sunlight resistant
- Flame retardant
- Direct burial
- Talc and silicone free

Technical Data

Voltage	600V 90C TC-ER-JP 1000V 90C Flexible VFD Servo Cable 1000V 90C WTTC 1000V 105C AWM
Temperature range	-40°C - +105°C static
Bending radius min	6 x cable OD
Conductor marking	Black with white numbers and one green/yellow ground
Oil resistance	Oil Res II
Approvals	UL Type Flexible Motor Supply Cable, Flexible VFD Servo Cable, TC-ER-JP, WTTC, DP-1 Meets NEC 336, 392 Class I & II, Div. 2 and Class I Zone 2 per NEC 501, 502, 505 AWM 20886 Submersible Pump (≥AWG14) c(UL) TC, CIC FT4 UL 1277 P-07-KA130021-MSHA RoHS, REACH

Construction

- AWG conductor
- Flexible fine wire stranded tinned copper conductors for improved electrical characteristics and reduced oxidation
- Thermoset XLPE insulation type RHW-2, Wet/Dry
- Shielded with foil tape, tinned copper braid with 80% optical coverage, and drain wire
- Oil resistant PVC jacket
- Black jacket similar to RAL 9005



Part No.	Description No. of conductors incl. ground	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
A2161604	AWG16/04C (26/30)	12.4	0.490	149	57
A2161404	AWG14/04C (41/30)	14.2	0.560	200	80
A2161204	AWG12/04C (65/30)	15.6	0.615	262	128
A2161004	AWG10/04C (105/30)	17.8	0.700	359	186
A2160804	AWG8/04C (168/30)	23.5	0.925	603	295
A2160604	AWG6/04C (266/30)	25.7	1.010	763	425
A2160404	AWG4/04C (413/30)	29.3	1.155	1,126	632
A2160204	AWG2/04C (665/30)	34.2	1.345	1,559	997

“RHW-2 insulated VFD cable offering optimal capacitance and impedance values. Great for applications with long cable runs”.
Meets NFPA 79, article 4.4.2.8.



Specifications are subject to change without prior notice

LUTZE DRIVEFLEX® XLPE (C) Symmetrical, Shielded

Flexible VFD Cable with 3 Symmetrical Grounds for Stationary Applications



Application

- Dual-shielded motor supply cable to connect power to 3-phase motors, VFDs and servo drives
- Three insulated symmetrical ground design helps to reduce stray currents
- Cable design for harsh industrial environments and operating conditions with high noise levels
- Thermoset XLPE insulation offering superior overload and short-circuit temperature
- Type XHHW-2 insulation offering smaller ODs for general VFD applications
- Compliant with NFPA 79 requirements
- TC-ER for use with cable trays without conduit, which can reduce installation costs in industrial environments
- WTTC – wind turbine tray cable rating for use in wind power generation
- Dry, damp or wet conditions

Characteristics

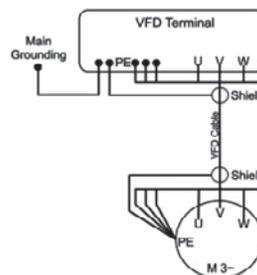
- Flexible XLPE conductors
- Three symmetrical, insulated grounds (PEs)
- High insulation resistance
- Low capacitance cable
- Effective dual layer shield for EMC compliance
- Oil resistant jacket designed for easy stripping
- Non-wicking fillers
- Crush impact resistant
- Gas/vapor-tight sheath per UL 1277
- Sunlight resistant
- Flame retardant
- Direct burial
- Talc and silicone free

Technical Data

Voltage	600V 90C TC-ER 1000V 90C Flexible VFD Servo Cable 1000V 90C WTTC
Temperature range	-40°C - +90°C static
Bending radius min	7.5 x cable OD fixed
Conductor marking	Black with white numbers and three green/yellow ground
Oil resistance	Oil Res II
Approvals	UL Type Flexible Motor Supply Cable, Flexible VFD Servo Cable up to 4/0 Meets NEC 336, 392 Class I & II, Div. 2 and Class I Zone 2 per NEC 501, 502, 505 UL Types WTTC, TC-ER c(UL) TC, CIC FT4, CE UL 1277, UL 2277 P-07-KA130021-MSHA RoHS, REACH

Construction

- AWG conductor
- Flexible fine wire stranded tinned copper conductors for improved electrical characteristics and reduced oxidation
- Thermoset XLPE insulation, Wet/Dry XHHW-2 (3C Power + 3C Grounds/PEs)
- Shielded with foil tape, tinned copper braid with 80% optical coverage, and drain wire
- Oil resistant PVC jacket
- Black jacket similar to RAL 9005



WITH THREE SYMMETRICAL GROUNDS (3 Power + 3 Protective Earth Grounds)

Part No.	Description Power Ground	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
A2200603	AWG6/03C (266 strands)+ AWG12/03C (50 strands)	23.9	0.941	677	432
A2200403	AWG4/03C (420 strands)+ AWG12/03C (50 strands)	26.4	1.039	872	586
A2200203	AWG2/03C (672 strands)+ AWG10/03C (80 strands)	29.3	1.155	1,230	875
A2200103	AWG1/03C (840 strands)+ AWG8/03C (128 strands)	35.2	1.385	1,600	1,121
A2201/003	1/0/03C (1064 strands)+ AWG8/03C (128 strands)	37.1	1.462	1,850	1,348
A2202/003	2/0/03C (1344 strands)+ AWG8/03C (128 strands)	39.1	1.540	2,187	1,620
A2203/003	3/0/03C (1664 strands)+ AWG6/03C (206 strands)	41.4	1.630	2,705	2,059
A2204/003	4/0/03C (2052 strands)+ AWG6/03C (206 strands)	47.8	1.880	3,336	2,461
A22025003	250MCM/03C* (2432 strands)+ AWG6/03C (206 strands)	51.6	2.032	3,815	2,851
A22035003	350MCM/03C* (3458 strands)+ AWG4/03C (322 strands)	59.4	2.340	5,153	3,993
A22050003	500MCM/03C* (4864 strands)+ AWG4/03C (322 strands)	65.8	2.589	6,803	5,397

*1000V WTTC, 600V TC-ER only

“Three symmetrical grounds design can help to reduce shaft voltage and bearing currents. This design is recommended for larger motors 40HP and up”.
Meets NFPA 79, article 4.4.2.8.



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