Specification AD5

High Performance, Irradiation Cross-linked Modified ETFE

Temperature Rating: -75°C to 150°C (Tin Coated), 200°C (Silver or Nickel Coated)

RSCC Aerospace & Defense is the leader in irradiation cross-linked modified ETFE technology. This material provides unique properties not found in any other wire insulation. Unlike tape wrap constructions, there is no fear of delamination due to improper sealing, or lifted tape edges. There extrusion process allows for consistent, high speed, low cost manufacturing.

Wire Processing
The wire provides for good mechanical protection during installation, and retains flexibility for easy routing. It is also very easy to mark with a laser, or ink jet. The insulation is also readily strippable.

Environmental
The material is highly chemically resistant allowing it to be used in many harsh environments. It can be used in direct contact with fuels, propellants, coolants, lubricants and oils. It also can be used where exposed to UV or salt water.
It also allows for use in a wide range of temperatures, from -75°C to +200°C. The combination of the low temperature, low off gassing, and radiation resistance make it an excellent choice for space applications.

Constructions
AD5 is manufactured in to provide a comprehensive range of product types for users. It is available in a wide range of conductor AWG sizes, and materials, as well as insulation thicknesses. The Lightweight construction is available in a single wall approximately .006” in thickness. The medium weight construction uses two walls, each approximately .004” in thickness for a total wall of .008”. The normal weight construction uses two walls, each approximately .005” in thickness, for a total wall of .010”.

AD5 is also manufactured in cable versions of 1 to 60 conductors, unshielded or shielded, unjacketed or jacketed.

Part Number Designation

SPEC Number	-	AWG	Insulation Type	No. of Cond	Shield Type	Jacket Type	-	Identification Code
AD5	–	20	B	2	T	23	-	A

Insulation Types

Conductor	Light Weight	Medium Weight	Normal Weight
Tin Copper	B	F	D
Silver Copper	R	G	P
Silver Alloy	C	H	E

Shield Designations

Shield Material	Single Shield	Double Shield
Tin Copper	T	V
Silver Copper	S	W
Nickel Copper	N	Y

Jacket Designations

Jacket Material	Single Jacket	Double Jacket
Unjacketed	U	
XL ETFE (White)	23	73
XL PVDF (White)	08	58

Component Identification Code

Singles

	Solid color Designators			Stripes
Use number color designators	0 = Black 1 = Brown 2 = Red 3 = Orange	4 = Yellow 5 = Green 6 = Blue 7 = Violet	8 = Grey 9 = White	9/6 = White / Blue Stripe 9/0 = White / Black Stripe

Cables

Identification Symbol	Number of Components	Colors
A	1 – 15	White with stripes 9, 9/6, 9/3, 9/5, 9/2, 9/0, 9/4, 9/8, 9/1, 9/6/6, 9/3/3, 9/5/5, 9/2/2, 9/0/0
B	1 – 4	Solid colors 9, 0, 2, 5
C	1 – 60	White with printed numbers 1 - 60
D	1 – 15	Per Designation Example – D – 9/90 - 9 Equal White & White/Black Pair with White Jacket

RSCC Aerospace & Defense
Innovation for Demanding Applications

Typical Singles Constructions

Part Number	Size (AWG)	Stranding	Material and Plating	Wire Dia. (nom.)	No. of Conductors	Shield	Jacket
AD5-26B1U00-9	26	19	Tin Copper	.032	1	NONE	NONE
AD5-24B1U00-9	24	19	Tin Copper	.037	1	NONE	NONE
AD5-22B1U00-9	22	19	Tin Copper	.043	1	NONE	NONE
AD5-20B1U00-9	20	19	Tin Copper	.051	1	NONE	NONE
AD5-18B1U00-9	18	19	Tin Copper	.061	1	NONE	NONE
AD5-16B1U00-9	16	19	Tin Copper	.069	1	NONE	NONE
AD5-14B1U00-9	14	19	Tin Copper	.086	1	NONE	NONE
AD5-12B1U00-9	12	37	Tin Copper	.104	1	NONE	NONE
AD5-26F1U00-9	26	19	Tin Copper	.036	1	NONE	NONE
AD5-24F1U00-9	24	19	Tin Copper	.042	1	NONE	NONE
AD5-22F1U00-9	22	19	Tin Copper	.047	1	NONE	NONE
AD5-20F1U00-9	20	19	Tin Copper	.054	1	NONE	NONE
AD5-18F1U00-9	18	19	Tin Copper	.065	1	NONE	NONE
AD5-16F1U00-9	16	19	Tin Copper	.073	1	NONE	NONE
AD5-14F1U00-9	14	19	Tin Copper	.090	1	NONE	NONE
AD5-12F1U00-9	12	37	Tin Copper	.108	1	NONE	NONE
AD5-26D1U00-9	26	19	Tin Copper	.040	1	NONE	NONE
AD5-24D1U00-9	24	19	Tin Copper	.045	1	NONE	NONE
AD5-22D1U00-9	22	19	Tin Copper	.050	1	NONE	NONE
AD5-20D1U00-9	20	19	Tin Copper	.058	1	NONE	NONE
AD5-18D1U00-9	18	19	Tin Copper	.070	1	NONE	NONE
AD5-16D1U00-9	16	19	Tin Copper	.077	1	NONE	NONE
AD5-14D1U00-9	14	19	Tin Copper	.094	1	NONE	NONE
AD5-12D1U00-9	12	37	Tin Copper	.111	1	NONE	NONE
AD5-10D1U00-9	10	37	Tin Copper	.134	1	NONE	NONE
AD5-8D1U00-9	8	133	Tin Copper	.195	1	NONE	NONE
AD5-6D1U00-9	6	133	Tin Copper	.241	1	NONE	NONE
AD5-4D1U00-9	4	133	Tin Copper	.310	1	NONE	NONE
AD5-2D1U00-9	2	665	Tin Copper	.405	1	NONE	NONE

Component Performance Characteristics:

Accelerated Aging: ..... 7 hrs. at 300°C
Blocking: ..... 4 hrs. at 200°C
Dry Arc Propagation Resistance: ..... Pass
Flammability: ..... FAR 25
Humidity Resistance: ..... 5,000 meg-ohms min.
Insulation Resistance; ..... 5000 meg-ohms min.
Immersions: ..... Tested per AS22759 Pass
Insulation Diameter: ..... Per above
Life Cycle: ..... 500 hrs. at 200°C

Component Performance Characteristics:

Low Temperature Bend: ……	4 hrs. at -65°C, No cracks
Markability:……	Ink Jet – 125 min cycles
Markability:……	Laser – 70% min. contrast
Shrinkage:……	.125” max. 4 hrs. at 230°C
Smoke: ……	230°C No visible smoke
Solderability: ……	Pass
Spark Test: ……	5700 Volts RMS
Stripability: ……	Pass
Wet Arc Propagation Resistance: ……	Pass
Wrap Test: ……	230C – 4X mandrel – Pass

Typical Cable Constructions

Part Number	Size (AWG)	Stranding	Material and Plating	Wire Dia. (nom.)	No. of Conds	Comp. Colors	Shield	Jacket
AD5-26B1T23-A	26	19	Tin Copper	.032	1	9	TC	XLETFE
AD5-24B1T23-A	24	19	Tin Copper	.037	1	9	TC	XLETFE
AD5-22B1T23-A	22	19	Tin Copper	.043	1	9	TC	XLETFE
AD5-20B1T23-A	20	19	Tin Copper	.051	1	9	TC	XLETFE
AD5-18B1T23-A	18	19	Tin Copper	.061	1	9	TC	XLETFE
AD5-16B1T23-A	16	19	Tin Copper	.069	1	9	TC	XLETFE
AD5-14B1T23-A	14	19	Tin Copper	.086	1	9	TC	XLETFE
AD5-12B1T23-A	12	37	Tin Copper	.104	1	9	TC	XLETFE
AD5-26B2T23-A	26	19	Tin Copper	.032	2	9 & 9/6	TC	XLETFE
AD5-24B2T23-A	24	19	Tin Copper	.037	2	9 & 9/6	TC	XLETFE
AD5-22B2T23-A	22	19	Tin Copper	.043	2	9 & 9/6	TC	XLETFE
AD5-20B2T23-A	20	19	Tin Copper	.051	2	9 & 9/6	TC	XLETFE
AD5-18B2T23-A	18	19	Tin Copper	.061	2	9 & 9/6	TC	XLETFE
AD5-16B2T23-A	16	19	Tin Copper	.069	2	9 & 9/6	TC	XLETFE
AD5-14B2T23-A	14	19	Tin Copper	.086	2	9 & 9/6	TC	XLETFE
AD5-12B2T23-A	12	37	Tin Copper	.104	2	9 & 9/6	TC	XLETFE
AD5-26B2T23-B	26	19	Tin Copper	.032	2	9 & 0	TC	XLETFE
AD5-24B2T23-B	24	19	Tin Copper	.037	2	9 & 0	TC	XLETFE
AD5-22B2T23-B	22	19	Tin Copper	.043	2	9 & 0	TC	XLETFE
AD5-20B2T23-B	20	19	Tin Copper	.051	2	9 & 0	TC	XLETFE
AD5-18B2T23-B	18	19	Tin Copper	.061	2	9 & 0	TC	XLETFE
AD5-16B2T23-B	16	19	Tin Copper	.069	2	9 & 0	TC	XLETFE
AD5-14B2T23-B	14	19	Tin Copper	.086	2	9 & 0	TC	XLETFE
AD5-12B2T23-B	12	37	Tin Copper	.104	2	9 & 0	TC	XLETFE