

REV.
A

AS5419™/8

FEDERAL SUPPLY CLASS
6145

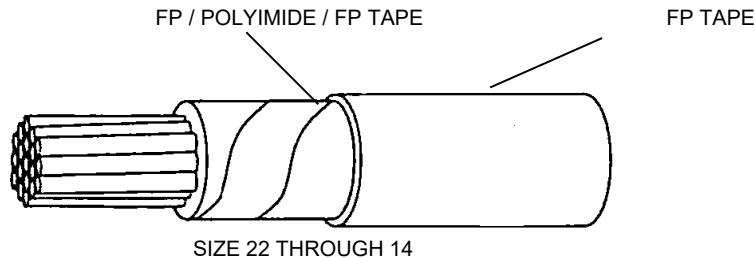
RATIONALE

LIMITED SCOPE REVISION REQUIRED TO ADDRESS EDITORIAL CHANGES AND CHANGES TO TABLE 2.

NOTICE

THE COMPLETE REQUIREMENTS FOR PROCURING THE PRODUCT DESCRIBED HEREIN SHALL CONSIST OF THIS DOCUMENT AND THE LATEST ISSUE OF AS5419.

TYPE "K" THERMOCOUPLE CONDUCTORS ARE TYPICALLY USED AS EXTENSION LEADS FOR AEROSPACE APPLICATION. THESE WIRES ARE ONLY TO BE USED IN A MATCHED PAIR AND PROCURED UNDER AS5419. THERMOCOUPLE EXTENSION WIRES ARE CALIBRATED FOR USE TOGETHER IN FABRICATING THERMOCOUPLES. IF EACH LEG OF THE THERMOCOUPLE EXTENSION WIRE IS FROM A DIFFERENT LOT, RECALIBRATION OF THE THERMOCOUPLE PAIR WILL BE REQUIRED.



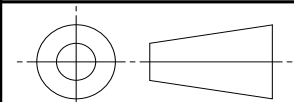
FP – FLUOROCARBON POLYMER MODIFIED POLYTETRAFLUOROETHYLENE (PTFE)
CONDUCTOR – STRANDED TYPE "K" THERMOCOUPLE

FIGURE 1 - WIRE, THERMOCOUPLE, SMOOTH SURFACE, FP/POLYIMIDE/FP, COMPONENT WIRE INSULATION SYSTEM MUST CONFORM TO THE SIMILAR WIRE TYPE DESIGNATED IN TABLE 1 OF AS5419. MANUFACTURERS MUST BE QUALIFIED TO AS22759/191 TO PRODUCE THIS PRODUCT.

For more information on this standard, visit

<https://www.sae.org/standards/content/AS5419/8A/>

THIRD ANGLE PROJECTION



CUSTODIAN: AE-8D

PROCUREMENT SPECIFICATION: AS5419



AEROSPACE STANDARD

WIRE, THERMOCOUPLE, SMOOTH SURFACE,
FP/POLYIMIDE/FP INSULATED, NICKEL/CHROMIUM (KP);
NICKEL/ALUMINUM/MANGANESE (KN) THERMOCOUPLE
EXTENSION, LIGHT WEIGHT, 260 °C

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SHEET 1 OF 7

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TABLE 1 - KP CONSTRUCTION DETAILS

TABLE 1A - KP CONSTRUCTION DETAILS, INCH-POUND UNITS

PART NUMBER 1/ AWG OF STRANDS	WIRE SIZE	STRANDING (NUMBER OF STRANDS X AWG OF STRANDS)	DIAMETER OF STRANDED CONDUCTOR (IN)		RESISTANCE (OHMS/1000 FT) AT 20 °C		FINISHED WIRE DIAMETER (IN)		WEIGHT (LB/1000 FT) (MAX)
			(MIN)	(MAX)	(MIN)	(MAX)	(MIN)	(MAX)	
DP-22KPS-9 DP-22KPH-9	22	19X34	.029	.033	546.7	604.3	.041	.046	3.2
DP-20KPS-9 DP-20KPH-9	20	19X32	.037	.041	339.2	375.0	.049	.055	4.7
DP-18KPS-9 DP-18KPH-9	18	19X30	.046	.051	217.0	240.0	.056	.063	6.9
DP-16KPS-9 DP-16KPH-9	16	19X29	.052	.058	169.7	187.7	.065	.072	8.9
DP-14KPS-9 DP-14KPH-9	14	19X27	.065	.073	107.6	119.0	.078	.086	13.7

TABLE 1B - KP CONSTRUCTION DETAILS, SI UNITS

PART NUMBER 1/ AWG OF STRANDS	WIRE SIZE	STRANDING (NUMBER OF STRANDS X AWG OF STRANDS)	DIAMETER OF STRANDED CONDUCTOR (MM)		RESISTANCE (OHMS/KM) AT 20 °C		FINISHED WIRE DIAMETER (MM)		WEIGHT (KG/KM) (MAX)
			(MIN)	(MAX)	(MIN)	(MAX)	(MIN)	(MAX)	
DP-22KPS-9 DP-22KPH-9	22	19X34	0.737	0.838	1793.6	1982.6	1.04	1.17	4.76
DP-20KPS-9 DP-20KPH-9	20	19X32	0.940	1.04	1112.9	1230.3	1.25	1.40	6.96
DP-18KPS-9 DP-18KPH-9	18	19X30	1.17	1.30	711.9	787.4	1.50	1.65	10.21
DP-16KPS-9 DP-16KPH-9	16	19X29	1.32	1.47	556.8	615.8	1.68	1.83	13.17
DP-14KPS-9 DP-14KPH-9	14	19X27	1.65	1.85	353.0	390.4	2.01	2.18	20.27

1/ THE COLOR (-9) SHALL BE WHITE ONLY.

NOTES:

ELECTROMOTIVE FORCE (EMF) DESIGNATOR = FOR TYPE KPS CONDUCTOR USE STANDARD LIMITS IN ASTM E230.
= TYPE KPH CONDUCTOR USE SPECIAL LIMITS IN ASTM E230.

EXAMPLE: SIZE 20 STANDARD EMF LIMITS - DP-20KPS-9; SIZE 20 SPECIAL EMF LIMITS - DP-20KPH-9.

THESE WIRES COMPLY WITH THE SEALING RANGE REQUIREMENT FOR FIREWALL CONNECTORS AS SPECIFIED IN AS50151, MIL-DTL-83723 (REFER TO MIL-DTL-83723 SUPERSESSION DATA), EXCEPT THAT 20 AWG WIRE IS NOT COMPATIBLE WITH MINIMUM SEALING RANGE OF MIL-DTL-38999 16 AWG CONTACTS AND 14 AWG WIRE IS NOT COMPATIBLE WITH MINIMUM SEALING RANGE OF MIL-DTL-83723 (REFER TO MIL-DTL-83723 SUPERSESSION DATA) AND MIL-DTL-38999 12 AWG CONTACTS.

	AEROSPACE STANDARD	AS5419™/8 SHEET 2 OF 7	REV. A
	WIRE, THERMOCOUPLE, SMOOTH SURFACE, FP/POLYIMIDE/FP INSULATED, NICKEL/CHROMIUM (KP); NICKEL/ALUMINUM/MANGANESE (KN) THERMOCOUPLE EXTENSION, LIGHT WEIGHT, 260 °C		



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TABLE 2 - KN CONSTRUCTION DETAILS

TABLE 2A - KN CONSTRUCTION DETAILS, INCH-POUND UNITS

PART NUMBER 1/ DP-22KNS-5 DP-22KNH-5	WIRE SIZE	STRANDING (NUMBER OF STRANDS X AWG OF STRANDS)	DIAMETER OF STRANDED CONDUCTOR (IN)		RESISTANCE (OHMS/1000 FT) AT 20 °C		FINISHED WIRE DIAMETER (IN)		WEIGHT (LB/1000 FT) (MAX)
			(MIN)	(MAX)	(MIN)	(MAX)	(MIN)	(MAX)	
DP-22KNS-5 DP-22KNH-5	22	19X34	.029	.033	228.2	252.3	.041	.046	3.2
DP-20KNS-5 DP-20KNH-5	20	19X32	.037	.041	141.5	156.5	.049	.055	4.7
DP-18KNS-5 DP-18KNH-5	18	19X30	.046	.051	90.5	100.2	.059	.065	6.9
DP-16KNS-5 DP-16KNH-5	16	19X29	.052	.058	70.6	78.2	.066	.072	8.9
DP-14KNS-5 DP-14KNH-5	14	19X27	.065	.073	44.9	49.7	.079	.086	13.7

TABLE 2B - KN CONSTRUCTION DETAILS, SI UNITS

PART NUMBER 1/ DP-22KNS-5 DP-22KNH-5	WIRE SIZE	STRANDING (NUMBER OF STRANDS X AWG OF STRANDS)	DIAMETER OF STRANDED CONDUCTOR (MM)		RESISTANCE (OHMS/KM) AT 20 °C		FINISHED WIRE DIAMETER (MM)		WEIGHT (KG/KM) (MAX)
			(MIN)	(MAX)	(MIN)	(MAX)	(MIN)	(MAX)	
DP-22KNS-5 DP-22KNH-5	22	19X34	0.737	0.838	748.7	827.8	1.04	1.17	4.76
DP-20KNS-5 DP-20KNH-5	20	19X32	0.940	1.04	464.2	513.5	1.25	1.40	6.98
DP-18KNS-5 DP-18KNH-5	18	19X30	1.17	1.30	296.9	328.6	1.50	1.65	10.21
DP-16KNS-5 DP-16KNH-5	16	19X29	1.32	1.47	231.6	256.6	1.68	1.83	13.17
DP-14KNS-5 DP-14KNH-5	14	19X27	1.65	1.85	147.6	163.1	2.01	2.18	20.27

1/ THE COLOR (-5) SHALL BE GREEN ONLY.

NOTES:

ELECTROMOTIVE FORCE (EMF) DESIGNATOR = FOR TYPE KPS CONDUCTOR USE STANDARD LIMITS IN ASTM E230.
= FOR TYPE KPH CONDUCTOR USE SPECIAL LIMITS IN ASTM E230.

EXAMPLE: SIZE 20 STANDARD EMF LIMITS - DP-20KNS-5; SIZE 20 SPECIAL EMF LIMITS - DP-20KNH-5.

THESE WIRES COMPLY WITH THE SEALING RANGE REQUIREMENT FOR FIREWALL CONNECTORS AS SPECIFIED IN AS50151, MIL-DTL-83723 (REFER TO MIL-DTL-83723 SUPERSESSION DATA), EXCEPT THAT 20 AWG WIRE IS NOT COMPATIBLE WITH MINIMUM SEALING RANGE OF MIL-DTL-38999 16 AWG CONTACTS AND 14 AWG WIRE IS NOT COMPATIBLE WITH MINIMUM SEALING RANGE OF MIL-DTL-83723 (REFER TO MIL-DTL-83723 SUPERSESSION DATA) AND MIL-DTL-38999 12 AWG CONTACTS.

	AEROSPACE STANDARD	AS5419™/8 SHEET 2 OF 7	REV. A
	WIRE, THERMOCOUPLE, SMOOTH SURFACE, FP/POLYIMIDE/FP INSULATED, NICKEL/CHROMIUM (KP); NICKEL/ALUMINUM/MANGANESE (KN) THERMOCOUPLE EXTENSION, LIGHT WEIGHT, 260 °C		



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