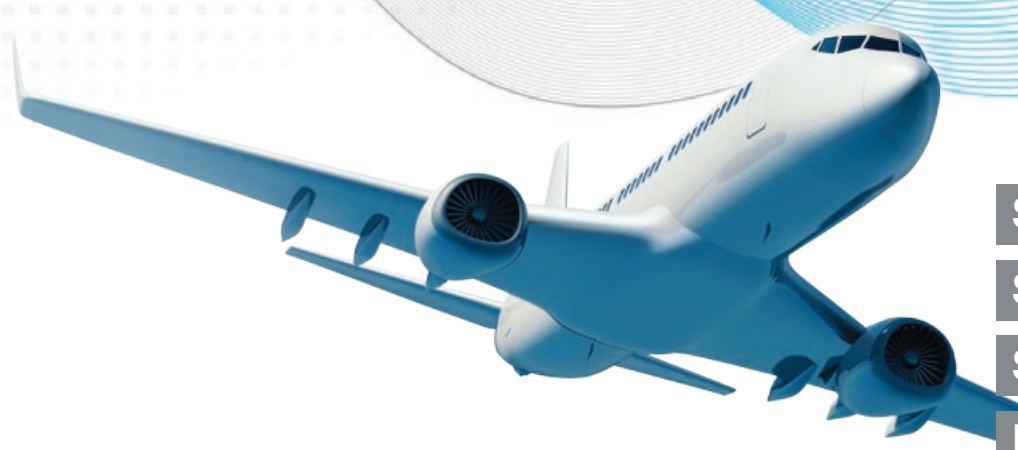


## Mil/Aero WireCable

...your one stop distributor



SAE AS22759

SAE AS81044

SAE AS27500

EN Specs Airbus

BMS 13-XX Boeing

# Introduction

Extruded Insulation Wire Variations



**SAE AS22759 Wire**



Page

4

**SAE AS81044 Wire**



Page

8

**SAE AS27500 Cable**



Page

9

**EN Specs Airbus Group**



Page

12

**BMS13-XX Boeing**



Page

16

Working closely with partnered QPL qualified manufacturers worldwide we offer a comprehensive range of wires and cables, plus associated products for the Defence and Aerospace markets.

Our customer service team includes technical specialists to provide the best customer support possible.

We offer a wide selection of MIL/Aero specification wires and cables, plus custom designed products.

Our experience and knowledge is able to provide you with advice and support on the best product available for your application, whether it is an off the shelf or a bespoke designed cable.



This product guide outlines a selection of our military and aerospace approved wires to the specifications mentioned, it is worth noting that we can supply a very broad range of high performance wire and cable from our key distribution partners, many of which are available from stock.

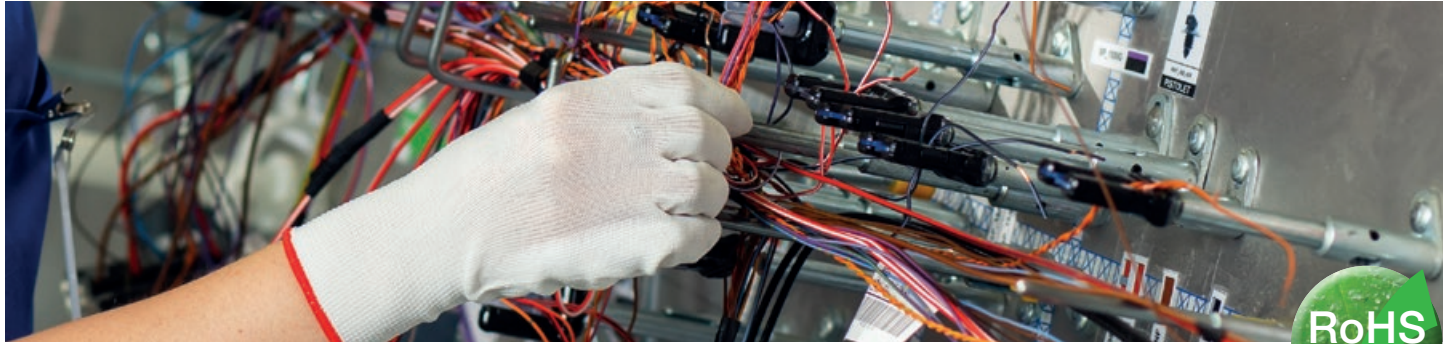
Performance Wire and Cable Range, includes...

- Commercial UL/CSA Wire
- Composite Aerospace Wire
- Fibre Optic Cable
- Harsh Environment & SWAMP Wire
- High Performance Coaxial Cable
- High Speed Digital and data Cable
- MIL-Spec Hookup Wire
- Speciality Cables

In addition to the wire and cable portfolio managed by IS-Rayfast, we can also supply numerous associated market approved and qualified products.

- Heat Shrink Tubing
- Protective Sleeving
- Screening Braids
- Moulded Parts
- Terminals and Splices
- Wire and Cable Markers
- Cable management
- Connectors and Backshells
- Bond Leads
- Relays and Contactors
- Switches and Grips
- Adhesives and tapes
- Application Equipment





SAE AS22759 wire is a fluoropolymer insulated single conductor wire that is ideal for a wide variety of military aerospace applications. Since AS22759 wire is built to meet military specifications, it is also the premier choice for many commercial applications.

SAE AS22759 wire boasts high performance and reliability in severe wind and moisture prone (SWAMP) zones such as engine nacelles as well as areas that require overload stability, low smoke emission and fire resistance, such as aircraft cabins.

SAE AS22759 wire can carry up to 1000 volts, and is capable of operating in extreme temperature ranges from -55°C to +260°C.

IS-Rayfast offers many different configurations of AS22759 wire. Choose copper or high strength copper alloy conductors coated with tin, silver, or nickel. We also provide a wide selection of insulation material options to meet your needs.

Some of the distinctive characteristics offered by AS22759 wire are:

- Excellent thermal stability
- High reliability
- High break strength and flex life
- High abrasion resistance
- AS22759 wire is available in sizes ranging from 30 to 0000 AWG.

M22759/5 to /12 PTFE

M22759/13 to /15 FEP, with PVDF outer

M22759/16 to /19 ETFE insulation

M22759/20 to /31 PTFE insulation

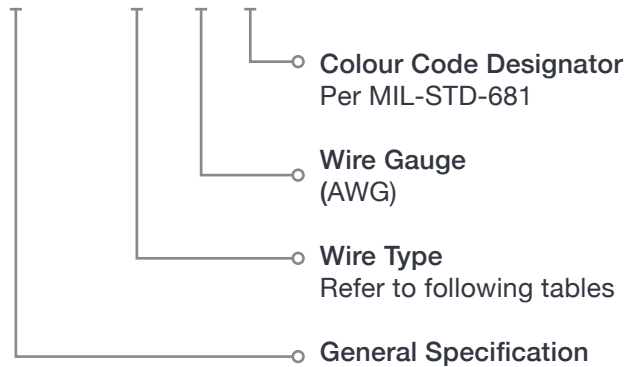
M22759/32 to /46 XL-ETFE insulation

M22759/80 to /92 Composite taped

M22759/180 to /192 Composite taped smooth

**M22759/34 26 9**

Part number example



Note: This specification was formerly listed under MIL-W-22759 and is supplied in full compliance with the SAE AS22759 specification.

## M22759/5 to /12 • Extruded PTFE Insulation

Reference	M27500 Identifier	Conductor Plating	Insulation	Temp. Rating	Voltage Rating	AWG
M22759/5	VA	Silver	Extruded PTFE*	200°C	600 V	24 to 20
M22759/6	WA	Nickel	Extruded PTFE*	260°C	600 V	24 to 20
M22759/7	SA	Silver	Extruded PTFE*	200°C	600 V	24 to 8
M22759/8	TA	Nickel	Extruded PTFE*	260°C	600 V	24 to 8
M22759/9	LE	Silver	Extruded PTFE	200°C	1000 V	28 to 10
M22759/10	LH	Nickel	Extruded PTFE	260°C	1000 V	28 to 8
M22759/11	RC	Silver	Extruded PTFE	200°C	600 V	28 to 8
M22759/12	RE	Nickel	Extruded PTFE	260°C	600 V	28 to 8

\* Denotes mineral filled PTFE insulation

## M22759/13 to /15 • Extruded FEP Insulation, with PVDF outer

Reference	M27500 Identifier	Conductor Plating	Insulation	Temp. Rating	Voltage Rating	AWG
M22759/13	CA	Tin	Extruded FEP/PVDF	135°C	600 V	24 to 10
M22759/14	CB	Tin	Extruded FEP/PVDF	135°C	600 V	26 to 12
M22759/15	CC	Silver HSCA	Extruded FEP/PVDF	135°C	600 V	26 to 20

## M22759/16 to /19 • Extruded ETFE Insulation

Reference	M27500 Identifier	Conductor Plating	Insulation	Temp. Rating	Voltage Rating	AWG
M22759/16	TE	Tin	Extruded ETFE	150°C	600 V	24 to 00
M22759/17	TF	Silver HSCA	Extruded ETFE	150°C	600 V	26 to 20
M22759/18	TG	Tin	Extruded ETFE	150°C	600 V	26 to 10
M22759/19	TH	Silver HSCA	Extruded ETFE	150°C	600 V	26 to 20

## M22759/20 to /31 • Extruded PTFE Insulation

Reference	M27500 Identifier	Conductor Plating	Insulation	Temp. Rating	Voltage Rating	AWG
M22759/20	TK	Silver HSCA	Extruded PTFE	200°C	1000 V	28 to 20
M22759/21	TL	Nickel HSCA	Extruded PTFE	260°C	1000 V	28 to 20
M22759/22	TM	Silver HSCA	Extruded PTFE	200°C	600 V	28 to 20
M22759/23	TN	Nickel HSCA	Extruded PTFE	260°C	600 V	28 to 20
M22759/28	JB	Silver	Extruded PTFE/Polyimide	200°C	600 V	28 to 10
M22759/29	JC	Nickel	Extruded PTFE/Polyimide	260°C	600 V	28 to 10
M22759/30	JD	Silver HSCA	Extruded PTFE/Polyimide	200°C	600 V	28 to 20
M22759/31	JE	Nickel HSCA	Extruded PTFE/Polyimide	260°C	600 V	28 to 10

## M22759/32 to /46 • Extruded XL-ETFE Insulation

Reference	M27500 Identifier	Conductor Plating	Insulation	Temp. Rating	Voltage Rating	AWG
M22759/32	SB	Tin	Extruded XL-ETFE	150°C	600 V	30 to 12
M22759/33	SC	Silver HSCA	Extruded XL-ETFE	200°C	600 V	30 to 20
M22759/34	SD	Tin	Extruded XL-ETFE Dual Wall*	150°C	600 V	24 to 00
M22759/35	SE	Silver HSCA	Extruded XL-ETFE Dual Wall	200°C	600 V	26 to 20
M22759/41	SM	Nickel	Extruded XL-ETFE Dual Wall*	200°C	600 V	26 to 00
M22759/42	SN	Nickel HSCA	Extruded XL-ETFE Dual Wall	200°C	600 V	26 to 20
M22759/43	SP	Silver	Extruded XL-ETFE Dual Wall*	200°C	600 V	26 to 00
M22759/44	SR	Silver	Extruded XL-ETFE	200°C	600 V	28 to 12
M22759/45	SS	Nickel	Extruded XL-ETFE	200°C	600 V	28 to 12
M22759/46	ST	Nickel HSCA	Extruded XL-ETFE	200°C	600 V	28 to 20

\* Denotes polymeric braid as outer sheath on certain sizes



Composite insulated cables address a number of issues associated with Polyimide and XL-ETFE wire and cable. Namely that of insulation thickness and consequent space and weight savings, without sacrificing the mechanical and thermal performance of the wire.

Series /80 to /92 wire offers...

### Approximate 5% weight saving over XL-ETFE

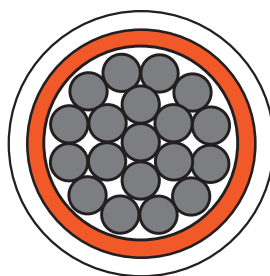
### M22759/80 to /92 • Composite Taped Wires

Reference	M27500 Identifier	Conductor Plating	Insulation	Temp. Rating	Voltage Rating	AWG
M22759/80	WB	Tin	Fluoropolymer/Polyimide, 2 Ply	150°C	600 V	26 to 10
M22759/81	WC	Silver, HSCA	Fluoropolymer/Polyimide, 2 Ply	200°C	600 V	26 to 20
M22759/82	WE	Nickel, HSCA	Fluoropolymer/Polyimide, 2 Ply	260°C	600 V	26 to 20
M22759/83	WF	Silver	Fluoropolymer/Polyimide, 4 Ply*	200°C	600 V	2 to 0000
M22759/84	WG	Nickel	Fluoropolymer/Polyimide, 4 Ply*	260°C	600 V	2 to 0000
M22759/85	WH	Tin	Fluoropolymer/Polyimide, 4 Ply*	150°C	600 V	2 to 0000
M22759/86	WJ	Silver	Fluoropolymer/Polyimide, 2 Ply	200°C	600 V	26 to 10
			Fluoropolymer/Polyimide, 3 Ply			8 to 6
			Fluoropolymer/Polyimide, 4 Ply	260°C		4 to 0000
M22759/87	WK	Nickel	Fluoropolymer/Polyimide, 2 Ply	260°C	600 V	26 to 10
			Fluoropolymer/Polyimide, 3 Ply			8 to 6
			Fluoropolymer/Polyimide, 4 Ply			4 to 0000
M22759/88	WL	Tin	Fluoropolymer/Polyimide, 2 Ply	150°C	600 V	26 to 10
			Fluoropolymer/Polyimide, 3 Ply			8 to 6
			Fluoropolymer/Polyimide, 4 Ply			4 to 0000
M22759/89	WM	Silver HSCA	Fluoropolymer/Polyimide, 2 Ply	200°C	600 V	26 to 20
M22759/90	WN	Nickel HSCA	Fluoropolymer/Polyimide, 2 Ply	260°C	600 V	26 to 20
M22759/91	WP	Silver	Fluoropolymer/Polyimide, 2 Ply	200°C	600 V	26 to 10
M22759/92	WR	Nickel	Fluoropolymer/Polyimide, 2 Ply	260°C	600 V	26 to 10

\* Denotes polymeric braid as outer sheath

Technological advances in recent years has enabled an improved ‘Smooth’ version of composite taped wires, that offers all the advantages of tape wrap found on the /80 to /92 series but with the smooth appearance and characteristics of an extrusion.

These /180 to /192 series wires offer superior performance characteristics over the 80 to 92 series in that...

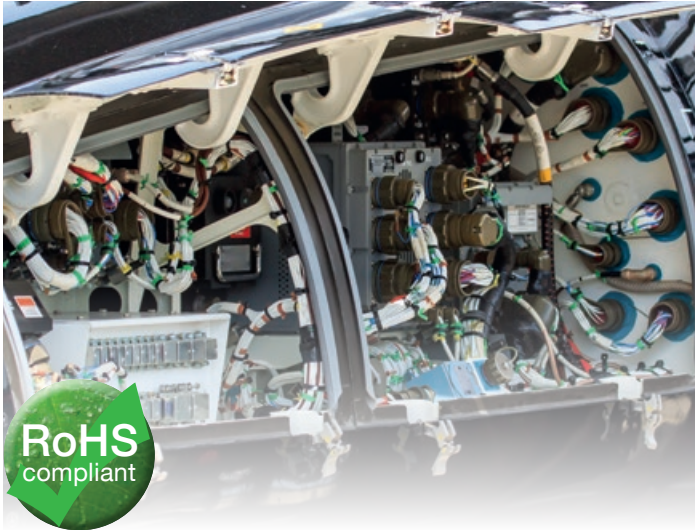


Marking Contrast up by circa 9%  
Scrape Abrasion resistance up by circa 47%

### M22759/180 to /192 • Composite Taped Wires ‘Smooth/Seamless’

Reference	M27500 Identifier	Conductor Plating	Insulation	Temp. Rating	Voltage Rating	AWG
M22759/180	DB	Tin	Fluoropolymer/Polyimide, 2 Ply	150°C	600 V	26 to 10
M22759/181	DC	Silver, HSCA	Fluoropolymer/Polyimide, 2 Ply	200°C	600 V	26 to 20
M22759/182	DE	Nickel, HSCA	Fluoropolymer/Polyimide, 2 Ply	260°C	600 V	26 to 20
M22759/183	DF	Silver	Fluoropolymer/Polyimide, 4 Ply*	200°C	600 V	2 to 0000
M22759/184	DG	Nickel	Fluoropolymer/Polyimide, 4 Ply*	260°C	600 V	2 to 0000
M22759/185	DH	Tin	Fluoropolymer/Polyimide, 4 Ply*	150°C	600 V	2 to 0000
M22759/186	DJ	Silver	Fluoropolymer/Polyimide, 2 Ply	200°C	600 V	26 to 10
			Fluoropolymer/Polyimide, 3 Ply			8 to 6
			Fluoropolymer/Polyimide, 4 Ply	260°C		4 to 0000
M22759/187	DK	Nickel	Fluoropolymer/Polyimide, 2 Ply	260°C	600 V	26 to 10
			Fluoropolymer/Polyimide, 3 Ply			8 to 6
			Fluoropolymer/Polyimide, 4 Ply			4 to 0000
M22759/188	DL	Tin	Fluoropolymer/Polyimide, 2 Ply	150°C	600 V	26 to 10
			Fluoropolymer/Polyimide, 3 Ply			8 to 6
			Fluoropolymer/Polyimide, 4 Ply			4 to 0000
M22759/189	DM	Silver, HSCA	Fluoropolymer/Polyimide, 2 Ply	200°C	600 V	26 to 20
M22759/190	DN	Nickel, HSCA	Fluoropolymer/Polyimide, 2 Ply	260°C	600 V	26 to 20
M22759/191	DP	Silver	Fluoropolymer/Polyimide, 2 Ply	200°C	600 V	26 to 10
M22759/192	DR	Nickel	Fluoropolymer/Polyimide, 2 Ply	260°C	600 V	26 to 10





SAE AS81044 wire is an extremely versatile and reliable stranded single-conductor insulated lead wire with an impressive operating range of -65°C to 150°C and a maximum voltage rating of 600V. This wire offers a resistance to cut-through, abrasion, cold flow and common chemicals, and has low smoke characteristics. This wire is ideal for cable construction, routing in conduits, or in protected areas of avionics and airframe compartments.

Originally developed for military and aerospace applications and is now commonly used in aircraft, ground support equipment, military vehicles, shipboard and missile platforms. This wire offers high density ratios which allow your application to meet strict weight requirements.

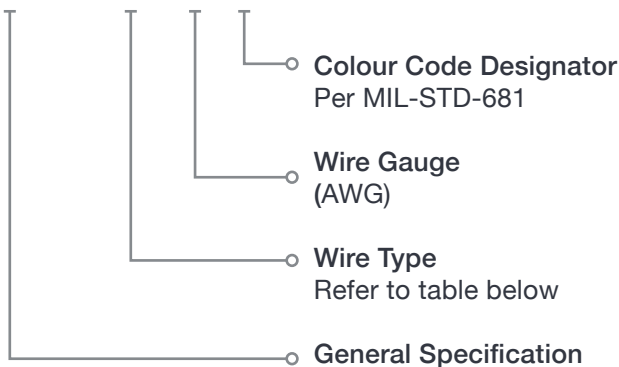
There are also various commercial and industry applications for AS81044 like harness wiring or most applications requiring a high density cable.

With conductor coatings including tin and silver, as well as high strength copper alloy,

Note: This specification was formerly listed under MIL-W-81044 and is supplied in full compliance with the SAE AS81044 specification.

### M81044/12 26 9

Part number example



### M81044/5 to /13 • Extruded XL Polyvinylidene Fluoride Insulation

Reference	M27500 Identifier	Conductor Plating	Jacket Insulation	Temp. Rating	Voltage Rating	AWG
M81044/5	MD	Silver	Extruded XL-PVDF	150°C	600 V	24 to 0
M81044/6	ME	Tin	Extruded XL-PVDF	150°C	600 V	24 to 0
M81044/7	MF	Silver, HSCA	Extruded XL-PVDF	150°C	600 V	26 to 20
M81044/8	MG	Silver	Extruded XL-PVDF	150°C	600 V	24 to 0
M81044/9	MH	Tin	Extruded XL-PVDF	150°C	600 V	24 to 0
M81044/10	MJ	Silver, HSCA	Extruded XL-PVDF	150°C	600 V	26 to 20
M81044/11	MK	Silver	Extruded XL-PVDF	150°C	600 V	30 to 12
M81044/12	ML	Tin	Extruded XL-PVDF	150°C	600 V	30 to 12
M81044/13	MM	Silver, HSCA	Extruded XL-PVDF	150°C	600 V	30 to 20



# NEMA WC27500 • M27500

Airframe and Equipment Wire



The ANSI/NEMA WC27500 REV A specification is commonly used to describe both shielded and unshielded cable constructions for avionics, aerospace, and airframe applications. The specification allows the user a wide variety of construction choices. Circuit identification, conductor size, insulation type, number of conductors, shielding material and jacket compound may all be specified.

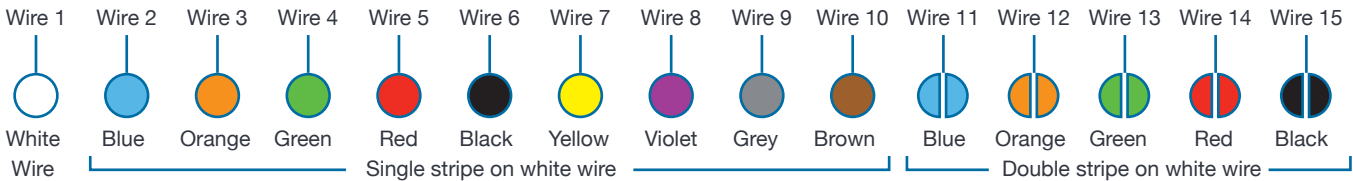
QPL is required for WC27500 in addition to the basic component wires. The producer of the finished cable must be a qualified source under the applicable basic wire specification or must provide evidence that qualified wire was used in the construction of the cable.



The colour identification charts below should be used in conjunction with the part M27500 numbering guide illustrated over the page.

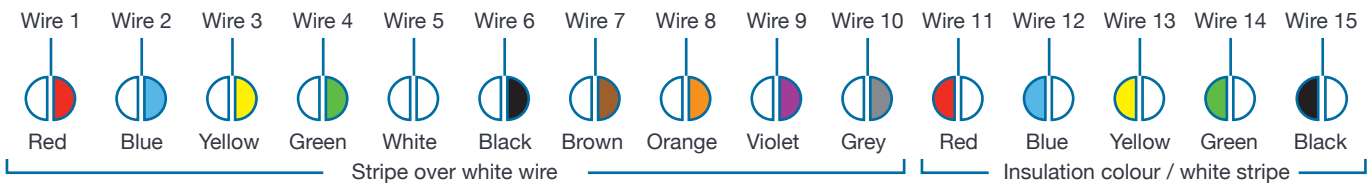
## M27500 Colour Table 3A

For cables having more than 10 conductors, the wires shall be a white base identified by double colour tracers as illustrated in chart below.



## M27500 Colour Table 3B

For cables having 1-4 and 6-10 wires colour designation is based on stripe over white wire. Whilst wire 5 has no stripe. Wires 11 to 15 colour designation indicates insulation colour with a white stripe.



## M27500 Colour Table 3C - Wire Sizes Identification

Cables colour code identification by AWG size. In accordance with MIL-STD686. For MIL-DTL-81381 basic wire, the insulation colour may be opaque dark yellow or unpigmented polyimide resin colour.



# NEMA WC27500 • M27500

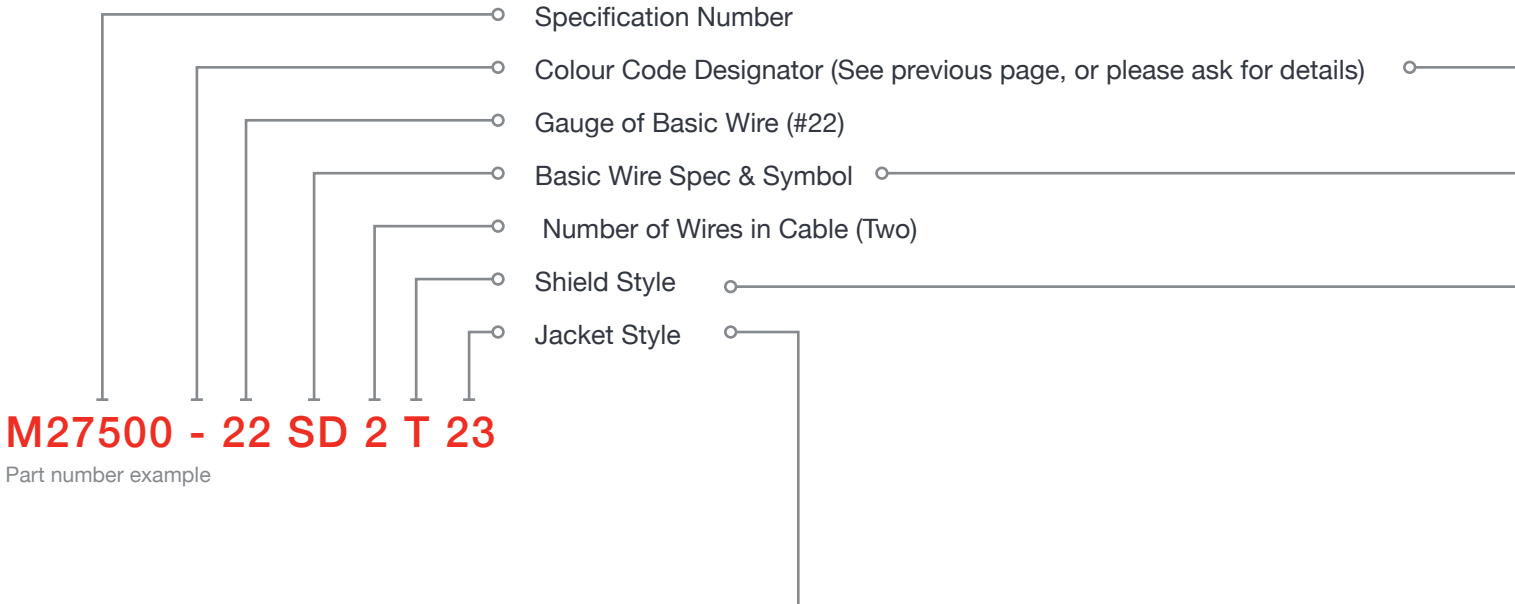
## Airframe and Equipment Wire



M27500 is low voltage, high temperature cable that is ideal for use in a variety of both military and commercial applications, including those involving airframes, avionics and ground support equipment.

Note: This specification was formerly listed under MIL-C-27500 and MIL-DTL-27500.

Because there are so many different construction types available for M27500, users may find it difficult to determine which one is appropriate for their specific application. For help determining this, or for more information on the different types of M27500 cable offered please contact us.



Single Jacket	Double Jacket	Jacket Style	Temp. Limit
00	00	No jacket	-
01	51	Extruded white PVC <sup>1</sup>	90°C
02	52	Extruded clear polyamide in accordance with ASTM D4066	105°C
03	53	White polyamide braid with clear polyamide finisher over a polyester tape	105°C
04	54	Polyester braid impregnated with high temp finishers over polyester tape	150°C
05	55	Extruded Clear FEP	200°C
06	56	Extruded or taped and heat sealed white PTFE	260°C
07	57	White PTFE treated glass braid impregnated and coated with PTFE finisher over presintered PTFE tape	260°C
08	58	Crosslinked white Extruded polyvinylidene fluoride (PVDF)	150°C
09	59	Extruded white FEP	200°C
10	60	Extruded Clear PVF	125°C
11 <sup>2</sup>	61 <sup>2</sup>	Tape of natural polyimide with FEP wrapped and heat sealed with FEP outer surface	200°C
12 <sup>2</sup>	62 <sup>2</sup>	Tape of natural polyimide with FEP wrapped and heat sealed with Polyamide outer surface	200°C
14	64	Extruded white ETFE (Tefzel)	150°C
15	65	Extruded clear ETFE (Tefzel)	150°C
16	66	Braid of aromatic polyamide with high-temp finisher over presintered PTFE Tape	200°C
17 <sup>3</sup>	67 <sup>3</sup>	Extruded white ECTFE	150°C
18 <sup>3</sup>	68 <sup>3</sup>	Extruded clear ECTFE	150°C
20	70	Extruded white perfluoroalkoxy (PFA)	260°C
21	71	Extruded clear perfluoroalkoxy (PFA)	260°C
22	72	Polyimide tape combined with clear FEP wrapped and heat sealed with opaque polyimide outer surface	200°C
23	73	White crosslinked extruded modified XLETFE	200°C
24	74	Tape layer of white PTFE wrapped over tape layer of natural polyimide combined with FEP and heat sealed	200°C

# NEMA WC27500 • M27500

Airframe and Equipment Wire



85% Shield Coverage	90% Shield coverage	M27500 Cable Terminology	Component Wire ID Method
-	C	Preferred method using Table 3A	White wire with coloured stripes. Wire 1 has no stripe. Wires 11-15 have double stripes
F	H	Preferred method using Table 3B	White wire with coloured stripes. Wire 5 has no stripe. Wires 11-15 insulation is first colour, stripe is second colour
A	D	Optional method A, using table 3A	Solid coloured wire. Wires 11-15 have a stripe in a lighter shade of base colour
G	J	Optional method A, using table 3B	Solid coloured wire. Wires 11-15 insulation is first colour, stripe is second colour
B	E	Optional method B, using table 3C	Wire colour is based on AWG size. Band of contrasting colour denotes wire number per table 3D
K	M	Optional method C, using table 3C	Wires are all same colour based on AWG size. Numbers of contrasting colour printed to denote wire number
L	N	Optional method D	White wires with numbers of contrasting colour printed to denote wire number

Symbol	Double Shield	Shield Style	Max Temp.
U	-	No Shield	-
T	V	Tin Plated Copper, Round	150°C
S	W	Silver Plated Copper, Round	200°C
N	Y	Nickel Copper, Round	260°C
F	Z	Stainless Steel, Round	400°C
C	R	Heavy Nickel Plated Copper, Round	400°C
M	K	Silver Plated HSCA, Round	200°C
P	L	Nickel Plated HSCA, Round	260°C
G	A	Silver Plated Copper, Flat	200°C
H	B	Silver Plated HSCA, Flat	200°C
*	#	Nickel Plated Copper, Flat	260°C
J	D	Tin Plated Copper, Flat	150°C
E	X	Nickel Plated HSCA, Flat	260°C
I	Q	Nickel Chromium Alloy, Flat	400°C

Symbol	Specification
CA	MIL-W-22759/13
CB	MIL-W-22759/14
CC	MIL-W-22759/15
E	MIL-W-22759/2
EA	MIL-W-22759/1
JB	MIL-W-22759/28
JC	MIL-W-22759/29
JD	MIL-W-22759/30
JE	MIL-W-22759/31
LE	MIL-W-22759/9
LH	MIL-W-22759/10
MD	MIL-W-81044/5
ME	MIL-W-81044/6
MF	MIL-W-81044/7
MG	MIL-W-81044/8
MH	MIL-W-81044/9
MJ	MIL-W-81044/10
MK	MIL-W-81044/11
ML	MIL-W-81044/12
MM	MIL-W-81044/13
RA	MIL-W-22759/3
RB	MIL-W-22759/4
RC	MIL-W-22759/11

Symbol	Specification
RE	MIL-W-22759/12
SA	MIL-W-22759/7
SB	MIL-W-22759/32
SC	MIL-W-22759/33
SD	MIL-W-22759/34
SE	MIL-W-22759/35
SM	MIL-W-22759/41
SN	MIL-W-22759/42
SP	MIL-W-22759/43
SR	MIL-W-22759/44
SS	MIL-W-22759/45
TA	MIL-W-22759/8
TE	MIL-W-22759/16
TF	MIL-W-22759/17
TG	MIL-W-22759/18
TH	MIL-W-22759/19
TK	MIL-W-22759/20
TL	MIL-W-22759/21
TM	MIL-W-22759/22
TN	MIL-W-22759/23
VA	MIL-W-22759/5
WA	MIL-W-22759/6

### Notes and Comments

1	PVC materials shall not be used for aerospace
2	Not for Naval Air Systems Command usage
3	Inactive for new design

For full table please contact us





European Standards (ENs) are governed by three European Standardisation Organisations (ESOs): CEN, CENELEC or ETSI. Such standards are recognised as a collaborative effort in technical standardisation per EU Regulation 1025/2012.

For supply chain experience, IS-Rayfast has strategic Mil/Aero franchises with existing international status suppliers and the ability to help design, engineer and supply industry leading products.

IS-Rayfast supplies a variety of EN-compliant hook-up wires for high temperature aerospace applications that are available in single and multicore designs.

Different polyimide/PTFE insulation and jacketing provide excellent resistance to aircraft fluids, chemicals and more. These cables are UV markable and they also have low smoke density and toxicity.

If the specification required is not listed on these pages please contact us as we supply an extensive range of specialist wire and cable.

### EN2266

Hook up airframe wiring, Polyimide tapes and FEP topcoat, with temperature rating -55°C to +200°C.

### EN2267

Hook up airframe wiring, polyimide plus PTFE tapes, with temperature rating -65°C to +260°C

### EN2713

Hook up airframe wiring, shielded and jacketed wire, with Polyimide & FEP sheath with temperature rating -65°C to +200°C

### EN2714

Hook up airframe wiring, shielded and jacketed wire, with Polyimide & PTFE tapes with temperature rating -65°C to +260°C

### ABS

0949, 1354 and 1356

### NSA

NSA 935344 and NSA 935348

### EN2266 • Hook-up and Airframe Wiring, -55°C to +200°C

Reference	Cable Family	Construction	AWG
<b>115V AC Single Core</b>			
EN2266-005A	CF-U	Nickel plated copper. Insulation Polyimide tapes and FEP topcoat	26 to 10
<b>115V AC Multi-Cores - Twisted Cable</b>			
EN2266-003B	PF	Cores: 2 x EN2266 basic cores twisted cable	26 to 10
EN2266-003C	QF	Cores: 3 x EN2266 basic cores twisted cable	26 to 10
EN2266-003D	RF	Cores: 4 x EN2266 basic cores twisted cable	26 to 10
<b>115V AC Multi-Cores - Polyimide plus Fluoropolymer top coat</b>			
EN2266-008B	DRP	Cores: 2 x EN2267-009A (DRA) basic cores twisted cable	26 to 14
EN2266-008C	DRT	Cores: 3 x EN2267-009A (DRA) basic cores twisted cable	26 to 12
EN2266-008D	DRQ	Cores: 4 x EN2267-009A (DRA) basic cores twisted cable	26 to 14

### EN2267 • Hook-up and Airframe Wiring, -65°C to +260°C

Reference	Cable Family	Construction	AWG
<b>115V AC Single Core</b>			
EN2267-008A	DM	Nickel plated copper. Insulation Polyimide + PTFE tapes	26 to 06
EN2267-007A	DMA	Nickel plated copper. Insulation Polyimide + PTFE tapes, UV proof	26 to 06
<b>115V AC Multi-Cores</b>			
EN2267-007B	PN	Cores: 2 x EN2267-007 (DMA) basic cores twisted cable	26 to 06
EN2267-007C	QL	Cores: 3 x EN2267-007 (DMA) basic cores twisted cable	26 to 06
EN2267-007D	RK	Cores: 4 x EN2267-007 (DMA) basic cores twisted cable	26 to 06
<b>115V AC Single Core</b>			
EN2267-010A	DR	Nickel plated copper. Insulation Polyimide + PTFE tapes	26 to 02
EN2267-009A	DRA	Same construction as DR but not sensitive to UV	26 to 02
<b>115V AC Multi-Cores</b>			
EN2267-009B	DRB	Cores: 2 x EN2267 (DRA) basic cores twisted cable	26 to 02
EN2267-009C	DRC	Cores: 3 x EN2267 (DRA) basic cores twisted cable	26 to 02
EN2267-009D	DRD	Cores: 4 x EN2267 (DRA) basic cores twisted cable	26 to 08
<b>230V AC Multi-Cores - Ultra Lightweight</b>			
EN2267-011	DZB	Cores: 2 x EN2267-012 (DZ) basic cores twisted cable	10, 12, 16
EN2267-011	DZC	Cores: 3 x EN2267-012 (DZ) basic cores twisted cable	10, 12, 16
<b>230V AC Single Core - Ultra Lightweight</b>			
EN2267-012	DZ	Nickel plated copper, Insulation Polyimide + PTFE tapes	10, 12, 16

### EN2713 • Hook-up and Airframe Wiring, -55°C to +200°C

Reference	Cable Family	Construction	AWG
<b>115V AC Shielded and Jacketed - Nickel plated copper spiral shield and Polyimide &amp; FEP sheath</b>			
EN2713-007A	SJ-U	EN2266 basic core, plus shield and sheath	26 to 10
EN2713-007B	TK-U	2 x EN2266 basic core, plus shield and sheath	26 to 10
EN2713-007C	UD-U	3 x EN2266 basic core, plus shield and sheath	26 to 12
EN2713-003D	VL	4 x EN2266 basic core, plus shield and sheath	26 to 10
<b>115V AC Shielded and Jacketed - Spiral screen silver plated copper and Polyimide tapes plus FEP top coat</b>			
EN2713-011A	SJB	Cores: 1 x EN0261-CFA (DRA) basic core	26 to 10
EN2713-011B	TKB	Cores: 2 x EN0261-CFA (DRA) basic cores twisted cable	26 to 14
EN2713-011C	UDB	Cores: 3 x EN0261-CFA (DRA) basic cores twisted cable	26 to 14
EN2713-011D	VLB	Cores: 4 x EN0261-CFA (DRA) basic cores twisted cable	26 to 16
<b>115V AC Shielded and Jacketed - Silver plated copper spiral shield and Polyimide &amp; Fluoropolymer top coat</b>			
EN2713-012A	MNA	Cores: 1 x EN2267-009A (DRA) basic core	26 to 10
EN2713-012B	MNB	Cores: 2 x EN2267-009A (DRA) basic cores twisted cable	26 to 14
EN2713-012C	MNC	Cores: 3 x EN2267-009A (DRA) basic cores twisted cable	26 to 14
EN2713-012D	MND	Cores: 4 x EN2267-009A (DRA) basic cores twisted cable	26 to 16

### EN2714 • Hook-up and Airframe Wiring, -65°C to +260°C

Reference	Cable Family	Construction	AWG
<b>115V AC Shielded and Jacketed - Nickel plated copper spiral shield and Polyimide &amp; PTFE tapes</b>			
EN2714-011A	GJ	Cores: 1 x EN2267-007 (DMA) basic core	26 to 10
EN2714-011B	MH	Cores: 2 x EN2267-007 (DMA) basic cores twisted cable	26 to 10
EN2714-011C	UU	Cores: 3 x EN2267-007 (DMA) basic cores twisted cable	26 to 10
EN2714-011D	VV	Cores: 4 x EN2267-007 (DMA) basic cores twisted cable	26 to 14
EN2714-012E	MJ	Cores: 5 x EN2267-007 (DMA) basic cores twisted cable	18 to 12
<b>115V AC Shielded and Jacketed - Nickel plated copper braided shield and Polyimide &amp; PTFE tapes</b>			
EN2714-013A	MLA	Cores: 1 x EN2267-009A (DRA) basic core	26 to 10
EN2714-013B	MLB	Cores: 2 x EN2267-009A (DRA) basic cores twisted cable	26 to 10
EN2714-013C	MLC	Cores: 3 x EN2267-009A (DRA) basic cores twisted cable	26 to 10
EN2714-013D	MLD	Cores: 4 x EN2267-009A (DRA) basic cores twisted cable	26 to 14
EN2714-014E	MME	Cores: 5 x EN2267-009A (DRA) basic cores twisted cable	18 to 12
EN2714-014X	MMX	Cores: 6 to 10 available on request	18 to 10



### ABS • Airframe Wiring Lightweight, -55°C to +180°C

Reference	Cable Family	Construction	AWG
<b>115V AC Single Core</b>			
ABS 0949	AD	Nickel plated copper clad aluminium (24-4), Nickel plated aluminium	24 to 000
ABS 1354	ADA	Same construction as AD but not sensitive to UV	24 to 000
<b>115V AC Multi-Cores</b>			
ABS 1354	ADB	Cores: 2 x ABS 1354 (ADA) basic cores twisted cable	24 to 000
ABS 1354	ADC	Cores: 3 x ABS 1354 (ADA) basic cores twisted cable	24 to 000
ABS 1354	ADD	Cores: 4 x ABS 1354 (ADA) basic cores twisted cable	24 to 000
<b>115V AC Shielded and Jacketed - Nickel plated copper spiral shield, with Polyimide + PTFE tapes</b>			
ABS 1356	VNA	Cores: 1 x ABS 1354 (ADA) basic core	24 to 10
ABS 1356	VNB	Cores: 2 x ABS 1354 (ADA) basic cores twisted cable	24 to 10
ABS 1356	VNC	Cores: 3 x ABS 1354 (ADA) basic cores twisted cable	24 to 10
ABS 1356	VND	Cores: 4 x ABS 1354 (ADA) basic cores twisted cable	24 to 14

### NSA • Data Transmission Coaxial, -68°C to +250°C

Reference	Cable Family	Construction	Ohms
<b>Coaxial Cables</b>			
NSA 935344	XE	Si plated Cu covered steel, dielectric PTFE, shield Si plated Cu braid, PTFE jacket	50
NSA 935348	XK	Si plated Cu covered steel, dielectric PTFE, shield Si plated Cu braid, FEP jacket	75

# BMS 13-\*\* Specs

Boeing



Boeing Spec Wire (BMS 13-\*\*) products are available for the aerospace and military industries. All of our Boeing Spec Wire products are designed and tested to meet Boeing specifications for use in most areas of construction. Whether you are transmitting power, data, or signals.

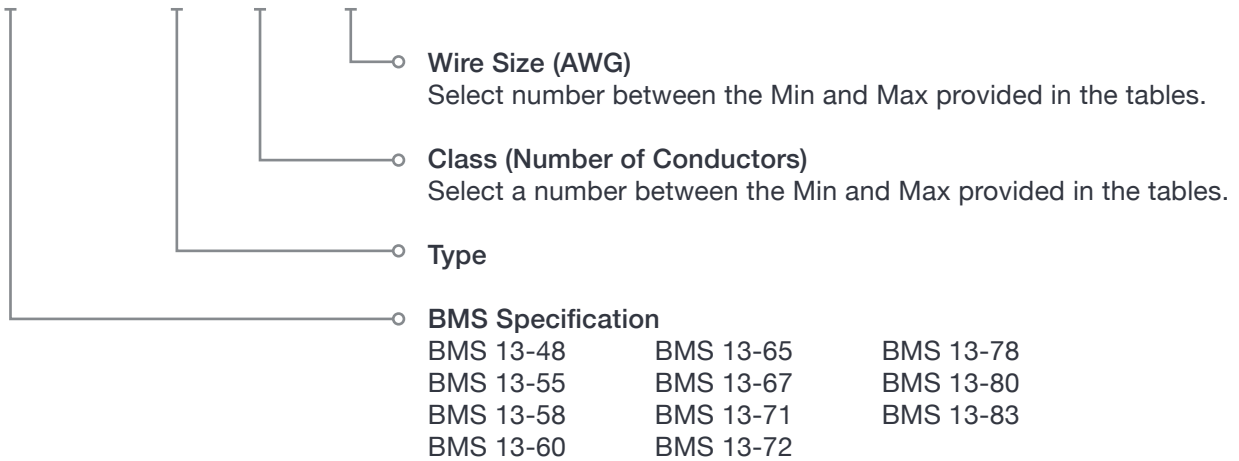
We offer all types of BMS13 cable available in various configurations and made from the highest quality materials. You can choose conductors made from high strength copper alloy, silver coated, nickel coated, tin-plated and more.

Cables can operate in temperatures from -65°C to +310°C, data bus from 50-120 ohms and can carry up to 600 volts. You should choose a design of cable based on the needs and conditions of your specific application.

Please note that we have only illustrated here the two most popular choices of wire. Please contact us for other versions as identified below.

Part number example

## BMS13-48 T20 C2 G20



## BMS 13-48 • Extruded XL-ETFE, 600V Wire and Cable -65°C to +150°C

Type	Class 'C'		Wire Size 'G'		Conductor		Shield		Jacket Material
	Min.	Max.	Min.	Max.	Material	Plating	Material	Plating	
1	1	5	24	10	Annealed Copper	Tin	-	-	-
2	1	5	24	16	HSCA	Nickel	-	-	-
3	1	5	24	10	Annealed Copper	Tin	Copper	Tin	XL-ETFE
4	2	5	24	12	Annealed Copper	Tin	-	-	XL-ETFE
5	1	5	24	16	HSCA	Silver	-	-	-
6	1	5	24	16	HSCA	Silver	Copper	Tin	XL-ETFE
7	2	5	24	16	HSCA	Silver	-	-	XL-ETFE
8	1	6	24	0000	Annealed Copper	Tin	-	-	-
9	1	6	24	16	HSCA	Silver	-	-	-
10	1	7	24	0000	Annealed Copper	Tin	-	-	-
11	1	6	24	16	HSCA	Silver	-	-	-

## BMS 13-48 continued

Type	Class 'C'		Wire Size 'G'		Conductor		Shield		Jacket Material
	Min.	Max.	Min.	Max.	Material	Plating	Material	Plating	
12	1	4	24	8	Annealed Copper	Tin	Copper	Tin	XL-ETFE
13	1	6	24	16	HSCA	Silver	Copper	Tin	XL-ETFE
14	2	5	24	12	Annealed Copper	Tin	-	-	XL-ETFE
15	1	4	24	12	Annealed Copper	Tin	Copper	Tin	XL-ETFE
16	1	6	24	10	Annealed Copper	Tin	-	-	-
17	2	5	20	12	Annealed Copper	Tin	-	-	XL-ETFE
18	1	4	20	12	Annealed Copper	Tin	Copper	Tin	XL-ETFE
19	1	6	24	16	HSCA	Silver	-	-	-
20	2	5	20	18	HSCA	Silver	-	-	XL-ETFE
21	1	4	20	18	HSCA	Silver	Copper	Tin	XL-ETFE
22	1	6	24	16	HSCA	Nickel	-	-	-
23	1	6	24	16	HSCA	Nickel	-	-	-
24	1	4	24	16	HSCA	Nickel	Copper	Tin	XL-ETFE
25	1	5	24	12	Annealed Copper	Tin	Flat Copper	Tin	XL-ETFE
26	1	5	24	16	HSCA	Nickel	Flat Copper	Tin	XL-ETFE
27	1	4	24	12	Annealed Copper	Tin	Flat Copper	Tin	XL-ETFE
28	1	5	24	16	HSCA	Silver	Flat Copper	Tin	XL-ETFE
29	1	5	24	16	HSCA	Nickel	Copper	Tin	XL-ETFE
30	2	5	24	16	Annealed Copper	Nickel	-	-	XL-ETFE
31	1	6	24	16	HSCA	Nickel	-	-	-
32	1	6	24	16	HSCA	Nickel	Copper	Tin	XL-ETFE
33	2	5	20	18	HSCA	Nickel	-	-	XL-ETFE
34	1	4	20	18	HSCA	Nickel	Copper	Tin	XL-ETFE
35	1	6	24	12	Annealed Copper	Silver	-	-	-
36	1	6	24	12	Annealed Copper	Silver	Copper	Tin	XL-ETFE
37	1	4	24	16	HSCA	Nickel	Dble Cu Braid	Tin	XL-ETFE
38	1	4	22	10	Annealed Copper	Tin	Dble Cu Braid	Tin	XL-ETFE
39	1	4	24	16	HSCA	Nickel	Flat Copper	Tin	XL-ETFE
40	1	5	22	10	Annealed Copper	Tin	Copper	Nickel	XL-ETFE
41	1	5	24	16	HSCA	Silver	Copper	Nickel	XL-ETFE
42	1	6	22	8	Annealed Copper	Tin	Copper	Nickel	XL-ETFE
43	1	6	24	8	HSCA	Silver	Copper	Nickel	XL-ETFE
44	1	4	22	10	Annealed Copper	Tin	Copper	Nickel	XL-ETFE
45	1	4	20	12	Annealed Copper	Tin	Copper	Nickel	XL-ETFE
46	1	4	20	18	HSCA	Silver	Copper	Nickel	XL-ETFE
47	1	4	24	16	HSCA	Nickel	Copper	Nickel	XL-ETFE
48	1	5	22	12	Annealed Copper	Tin	Flat Copper	Nickel	XL-ETFE
49	1	5	24	16	HSCA	Nickel	Flat Copper	Nickel	XL-ETFE



# BMS 13-\*\* Specs

Boeing ETFE 600V continued and PTFE 600V



## BMS 13-48 continued

Type	Class 'C'		Wire Size 'G'		Conductor		Shield		Jacket Material
	Min.	Max.	Min.	Max.	Material	Plating	Material	Plating	
50	1	4	22	12	Annealed Copper	Tin	Flat Copper	Nickel	XL-ETFE
51	1	5	24	16	HSCA	Silver	Flat Copper	Nickel	XL-ETFE
52	1	5	24	16	HSCA	Nickel	Copper	Nickel	XL-ETFE
53	1	6	24	16	HSCA	Nickel	Copper	Nickel	XL-ETFE
54	1	4	20	18	HSCA	Nickel	Copper	Nickel	XL-ETFE
55	1	6	22	12	Annealed Copper	Silver	Copper	Nickel	XL-ETFE
56	1	4	24	16	HSCA	Nickel	Copper	Nickel	XL-ETFE
57	1	4	22	10	Annealed Copper	Tin	Copper	Nickel	XL-ETFE
58	1	5	24	16	HSCA	Nickel	Copper	Nickel	XL-ETFE
59	1	7	22	0000	Annealed Copper	Nickel	-	-	-
60	1	5	22	10	Annealed Copper	Nickel	Flat Copper	Nickel	ETFE XL-ETFE

## BMS 13-60 • Arc Resistant, 600V Wire and Cable, -65°C up to +260°C

Type	Class		Wire Size		Conductor		Shield		Jacket Material	Max. Temp
	Min.	Max.	Min.	Max.	Material	Plating	Material	Plating		
1	1	8	22	0000	Annealed Copper	Tin	-	-	-	150°C
2	1	4	22	10	Annealed Copper	Tin	Copper Braid	Tin	PI/PTFE	150°C
3	2	4	22	10	Annealed Copper	Tin	-	-	PI/PTFE	150°C
4	1	8	24	16	HSCA	Nickel	-	-	-	260°C
5	1	4	24	16	HSCA	Nickel	Copper Braid	Tin	PI/PTFE	150°C
			14	10	Annealed Copper					
6	2	4	24	16	HSCA	Nickel	-	-	PI/PTFE	260°C
7	1	8	22	0000	Annealed Copper	Nickel	-	-	-	260°C
8	1	6	22	10	Annealed Copper	Nickel	Copper Braid	Nickel	PI/PTFE	260°C
9	2	4	22	10	Annealed Copper	Nickel	-	-	PI/PTFE	260°C
			5	8						
10	1	8	24	16	HSCA	Nickel	-	-	-	260°C
11	1	6	24	16	HSCA	Nickel	Copper Braid	Nickel	PI/PTFE	260°C
12	2	4	24	16	HSCA	Nickel	-	-	PI/PTFE	260°C
13	1	6	22	10	Annealed Copper	Tin	Copper Braid	Tin	PI/PTFE	150°C
14	2	6	22	10	Annealed Copper	Tin	-	-	PI/PTFE	150°C
15	1	6	24	16	HSCA	Nickel	Copper Braid	Tin	PI/PTFE	150°C
			22	10	Annealed Copper					
16	2	6	24	16	HSCA	Nickel	-	-	PI/PTFE	260°C
17	1	6	22	10	Annealed Copper	Nickel	Copper Braid	Nickel	PI/PTFE	260°C
18	2	6	22	10	Annealed Copper	Nickel	-	-	PI/PTFE	260°C

## BMS 13-60 continued

Type	Class		Wire Size		Conductor		Shield		Jacket Material	Max. Temp
	Min.	Max.	Min.	Max.	Material	Plating	Material	Plating		
19	1	8	22	0000	Annealed Copper	Nickel	-	-	PI/PTFE	260°C
20	1	5	22	10	Annealed Copper	Nickel	Copper Braid	Nickel	PI/PTFE	260°C
21	2	4	22	10	Annealed Copper	Nickel	-	-	PI/PTFE	260°C
22	1	3	8	0000	EC Aluminium	-	-	-	PI/PTFE	175°C
23	10	10	18	18	HSCA	Nickel	-	-	PI/PTFE	260°C
24	7	7	20	20	Annealed Copper	Tin	Copper Braid	Nickel	PI/PTFE	150°C
25	1	4	24	16	HSCA	Nickel	Double Cu Braid	Nickel	PI/PTFE	260°C
26	1	3	24	16	HSCA	Nickel	Double Flat Cu Braid	Tin	PI/PTFE	150°C
27	1	3	22	16	HSCA	Nickel	Double Cu Braid	Nickel	PI/PTFE	260°C
28	1	8	22	10	Annealed Copper	Tin	-	-	-	150°C
29	1	8	22	10	Annealed Copper	Nickel	-	-	-	260°C
30	1	8	24	16	HSCA	Nickel	-	-	-	260°C
31	1	6	22	16	Annealed Copper	Tin	Flat Copper Braid	Tin	PI/PTFE	150°C
32	1	6	24	16	HSCA	Nickel	Flat Copper Braid	Tin	PI/PTFE	150°C
33	1	6	22	16	HSCA	Tin	Flat Copper Braid	Tin	PI/PTFE	150°C
34	1	6	24	16	HSCA	Nickel	Flat Copper Braid	Tin	PI/PTFE	150°C
35	1	8	26	16	HSCA	Silver	-	-	-	200°C
36	1	6	26	16	HSCA	Silver	Flat Copper Braid	Silver	PI/PTFE	200°C
37	1	6	26	16	HSCA	Nickel	Flat Copper Braid	Silver	PI/PTFE	200°C
38	1	6	22	10	Annealed Copper	Nickel	Flat Copper	Silver	PI/PTFE	200°C
39	1	8	26	12	HSCA	Silver	-	-	-	200°C
40	1	6	26	16	HSCA	Silver	Flat Copper	Silver	PI/PTFE	200°C
41	1	6	24	16	HSCA	Nickel	Flat Copper	Silver	PI/PTFE	200°C
42	1	6	22	10	Annealed Copper	Nickel	Flat Copper	Silver	PI/PTFE	200°C
43	1	6	22	10	Annealed Copper	Nickel	Flat Copper	Silver	PI/PTFE	200°C
44	1	4	22	16	Annealed Copper	Nickel	-	-	-	260°C
45	1	4	24	10	HSCA	Nickel	-	-	-	260°C
46	1	4	24	16	HSCA	Nickel	Copper Braid	Nickel	PI/PTFE	260°C
47	1	4	20	10	Annealed Copper	Nickel	Copper Braid	Nickel	PI/PTFE	260°C
48	1	4	24	16	HSCA	Nickel	Double Copper Braid	Nickel	PI/PTFE	260°C
49	1	4	22	10	Annealed Copper	Nickel	Double Copper Braid	Nickel	PI/PTFE	260°C
50	1	4	26	16	HSCA	Nickel	Copper Braid	Nickel	PI/PTFE	260°C
51	1	4	26	16	HSCA	Nickel	Flat Copper	Nickel	PI/PTFE	260°C
52	1	4	22	10	Annealed Copper	Nickel	Flat Copper	Nickel	PI/PTFE	260°C
53	1	3	22	16	HSCA	Nickel	Double Copper Braid	Nickel	PI/PTFE	260°C
54	1	4	22	10	Annealed Copper	Nickel	Double Copper Braid	Nickel	PI/PTFE	260°C

Pi - Polyimide

## Contact Us

### IS-Rayfast, IS-Motorsport

Website: [www.is-rayfast.com](http://www.is-rayfast.com)  
 Telephone: +44 (0)1793 616700  
 Fax: +44 (0)1793 644304  
 Email: [sales@is-rayfast.com](mailto:sales@is-rayfast.com)

### IS-Sommer

#### Germany, Switzerland and Austria

Website: [www.is-sommer.com](http://www.is-sommer.com)  
 Telephone: +49 71 58 98 127-0  
 Fax: +49 71 58 98 127-98  
 Email: [info@is-sommer.com](mailto:info@is-sommer.com)

### IS-Connect, IS-Motorsport USA and Canada

Website: [www.is-connect.com](http://www.is-connect.com)  
 Telephone: +1 (317) 244 6643  
 Fax: +1 (317) 244 6693  
 Email: [sales@is-connect.com](mailto:sales@is-connect.com)

LinkedIn: [linkedin.com/company/is-rayfast-ltd](https://www.linkedin.com/company/is-rayfast-ltd)  
 Facebook: [facebook.com/IS.Rayfast](https://www.facebook.com/IS.Rayfast)  
 Twitter: [twitter.com/IS\\_Rayfast](https://twitter.com/IS_Rayfast)

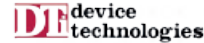


## TO DO BUSINESS WITH US...

Key Account Managers  
 Technical Support  
 Internal Sales team  
 Online Chat  
 Online Enquiries



Distribution partners for...



All the information contained in this publication is believed to be reliable. However, we advise that customers should separately evaluate the suitability of our products for their particular application. The IS-Group give no guarantee in respect of the accuracy or sufficiency of the information presented and disclaim any liability regarding its use. Our responsibilities are only those listed in our standard terms and conditions of sale for these products. In no instance will we be liable for any eventual, indirect, or consequential damage or damages from the sale, resale, transfer, use or misuse of the product.

Images and illustrations used in this publication are used with the permission and/or under open licence agreement, attributed to various sources including our supplier partners, Crown Copyright (courtesy of Defence Imagery), DoD (USA), Elektro-Metall, iStock and Dreamstime.

Design and content of this catalogue is copyright © 2017 all rights reserved.