

# MIL-DTL-27500 Cables—general information

**MIL-DTL-27500 (NEMA WC27500)** cables incorporate from one to fifteen M22759, MIL-W-25038, or MIL-DTL-81381 wires, plus a single or double shield and a single or double jacket.

Although these cables are designed primarily for use in aircraft and ground support equipment, their high performance and versatility makes them ideal in a wide variety of general-purpose electrical and electronic applications.

The MIL-DTL-27500 part numbering system provides for many combinations of cable construction characteristics (see charts beginning on next page). The following product pages provide detailed construction and performance information for some of the most popular varieties of one- to four-conductor cables.

Many of these cables are available with component wires and/or jackets with our unique **Seamless Wrap** PTFE tape, as noted the product pages. Additionally, cables with -24 jacket styles and M22759/80 through /92 component wires can be ordered with **Seamless Wrap** for both the component wire insulation and the outer jacket layer. See page 87 for more details, part numbers, and ordering information.

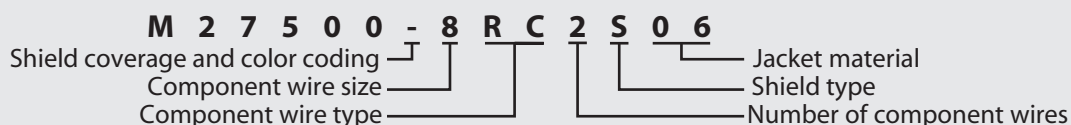
Component Wire	M27500 type	Page	Component Wire	M27500 type	Page
M22759/7	SA	68	M22759/92	WR*	76
M22759/8	TA	68	M25038/1	JA	77
M22759/11	RC	69	M25038/3	JF	78
M22759/12	RE	69	M81381/7	MR	79
M22759/16	TE	70	M81381/8	MS	79
M22759/17	TF	70	M81381/9	MT	80
M22759/18	TG	71	M81381/10	MV	80
M22759/19	TH	71	M81381/11	MW	81
M22759/80	WB*	72	M81381/12	MY	81
M22759/81	WC*	73	M81381/13	NA	82
M22759/82	WE*	73	M81381/14	NB	82
M22759/86	WJ*	74	M81381/17	NE	83
M22759/87	WK*	74	M81381/18	NF	83
M22759/88	WL*	74	M81381/19	NG	84
M22759/89	WM*	75	M81381/20	NH	84
M22759/90	WN*	75	M81381/21	NK	85
M22759/91	WP*	76	M81381/22	NL	86

\*Available with **Seamless Wrap** PTFE tape insulation and jacket.

See following pages for numbering system, material codes, and color coding charts.

# MIL-DTL-27500 Cables—part numbering

## MIL-DTL-27500 Part Numbering



## MIL-DTL-27500 Component Wire Codes

We can supply M27500 cables with component wires other than those listed; please call with your requirements.

Wire Type	Code	Wire Type	Code	Wire Type	Code	Wire Type	Code	Wire Type	Code	Wire Type	Code
M22759/5	VA	M22759/16	TE	M22759/28	JB	M22759/85	WH	M25038/1	JA	M81381/13	NA
M22759/6	WA	M22759/17	TF	M22759/29	JC	M22759/86	WJ	M25038/3	JF	M81381/14	NB
M22759/7	SA	M22759/18	TG	M22759/30	JD	M22759/87	WK	M81381/7	MR	M81381/17	NE
M22759/8	TA	M22759/19	TH	M22759/31	JE	M22759/88	WL	M81381/8	MS	M81381/18	NF
M22759/9	LE	M22759/20	TK	M22759/80	WB	M22759/89	WM	M81381/9	MT	M81381/19	NG
M22759/10	LH	M22759/21	TL	M22759/81	WC	M22759/90	WN	M81381/10	MV	M81381/20	NH
M22759/11	RC	M22759/22	TM	M22759/82	WE	M22759/91	WP	M81381/11	MW	M81381/21	NK
M22759/12	RE	M22759/23	TN	M22759/84	WG	M22759/92	WR	M81381/12	MY	M81381/22	NL

## MIL-DTL-27500 Shield Material Codes

When both double shield and double jacket are specified, the inner jacket is between the two layers of shield.

Shield Material , Wire shape	Temperature limit, °C	Single shield	Double shield
No shield	—	U	U
Nickel-plated copper, round	260	N	Y
Silver-plated copper, round	200	S	W
Tin-plated copper, round	150	T	V
Heavy nickel-plated copper, round	400	C	R
Stainless steel, round	400	F	Z
Nickel-plated high-strength copper alloy, round	260	P	L
Silver-plated high-strength copper alloy, round	200	M	K
Nickel-plated copper, flat	260	*	#
Silver-plated copper, flat	200	G	A
Tin-plated copper, flat	150	J	D
Nickel-plated high-strength copper alloy, flat	260	E	X
Silver-plated high-strength copper alloy, flat	200	H	B

## MIL-DTL-27500 Jacket Material Codes

Temperature limits are for information only; other cable components may determine the temperature limit for the finished cable.

Jacket material and color	Temp. limit, °C	Single jacket	Double jacket
No jacket	—	00	00
ETFE, extruded, clear	150	15	65
ETFE, extruded, white	150	14	64
FEP, extruded, clear	200	05	55
FEP, extruded, white	200	09	59
Nylon, extruded, clear	105	02	52
PFA, extruded, clear	260	21	71
PFA, extruded, white	260	20	70
Natural polyimide / clear FEP tape, wrapped and heat sealed, with FEP outer surface	200	11	61
Natural polyimide / FEP tape, wrapped and heat sealed, with polyimide outer surface	200	12	62
PTFE, taped, white*	260	06	56
PTFE tape, white, wrapped over a tape layer of natural polyimide combined with FEP and heat sealed*	260	24	74
PTFE-coated glass braid impregnated with PTFE finisher over PTFE tape, natural	260	07	57
PVC, extruded, white	90	01	51

\*These cables can be provided with **Seamless Wrap** PTFE tape jackets (see page 87 for details).

See next page for color coding information.

# MIL-DTL-27500 Cables—color coding

## MIL-DTL-27500 Color Coding

Color coding for MIL-DTL-27500 cables is specified in conjunction with desired shield coverage:

Color Code for Shield Coverage of:		MIL-DTL-27500 terminology	Component wire identification method
85%	90%		
"_"	C	Preferred method, Table III A	White wires with colored stripes —stripe color per Table III A.
F	H	Preferred method, Table III B	White wires with colored stripes —stripe color per Table III B.
A	D	Optional method A, Table III A	Solid color wires—colors per Table III A.
G	J	Optional method A, Table III B	Solid color wires—colors per Table III B.
B	E	Optional method B, Table III C	Wires are all the same color (based on AWG size), per Table III C. Bands of a contrasting color are printed on each wire to denote wire number (circuit ID) per Table III D.
K	M	Optional method C	Wires are all the same color (based on AWG size), per Table III C. Numbers in a contrasting color are printed on each wire to denote wire number (circuit ID).
L	N	Optional method D	White wires with numbers in a contrasting color printed on each wire to denote wire number (circuit ID).

### Table III A Color Coding

- For **"preferred method"** color coding, colors are stripes on white insulation (wire #1 has no stripe). Wires 11–15 have double stripes as indicated.
- For **"optional method A"** color coding, colors are solid insulation color. Wires 11–15 have a stripe in a lighter shade of the base color.

Wire Number														
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
White	Blue	Orange	Green	Red	Black	Yellow	Violet	Gray	Brown	Blue/Blue	Orange/Orange	Green/Green	Red/Red	Black/Black

### Table III B Color Coding

- For **"preferred method"** color coding, colors are stripes on white insulation (wire #5 has no stripe), for wires 1–10. For wires 11–15, color pairs indicate insulation of the first color, with a stripe of the second color.
- For **"optional method A"** color coding, colors are solid insulation color, for wires 1–10. For wires 11–15, color pairs indicate insulation of the first color, with a stripe of the second color.
- For **either method** the color of the wire in a one-conductor cable is white.

Wire Number														
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Red	Blue	Yellow	Green	White	Black	Brown	Orange	Violet	Gray	Red/White	Blue/White	Yellow/White	Green/White	Black/White















### Table III C Color Coding

- For **"optional method B"** color coding, wire insulation color is based on AWG size, with color bands per Table III D to indicate wire number (circuit ID).
- For **"optional method C"** color coding, wire insulation color is based on AWG size, with numbers printed on each wire to indicate wire number (circuit ID).

AWG size	Color	AWG size	Color
26	Black	10	Brown
24	Blue	8	Red
22	Green	6	Blue
20	Red	4	Yellow
18	White	2	Red
16	Blue	1	White
14	Green	0	Blue
12	Yellow	00	Green

### Table III D Color Band Configuration

- For **"optional method B"** color coding, band groups as shown below are printed on wires to indicate wire number (circuit ID).

Wire number	Band configuration
1	None
2	2 narrow 
3	3 narrow 
4	4 narrow 
5	5 narrow 
6	6 narrow 
7	7 narrow 
8	1 wide, 1 narrow 
9	1 wide, 2 narrow 
10	1 wide, 3 narrow 
11	1 wide, 4 narrow 
12	1 wide, 5 narrow 
13	2 wide, 1 narrow 
14	2 wide, 2 narrow 
15	2 wide, 3 narrow 

# M27500 Cables—types SA and TA (M22759/7, /8 components)

**M27500 SA and TA cables** are shielded and jacketed cables with PTFE tape or extruded PFA jackets, incorporating MIL-W-22759/7 or /8 wires. These component wires are insulated with light-weight mineral-filled PTFE, and have silver-plated or nickel-plated copper conductors.

Versions with PTFE tape jackets are available with our unique **Seamless Wrap** PTFE tape (see page 87 for details).

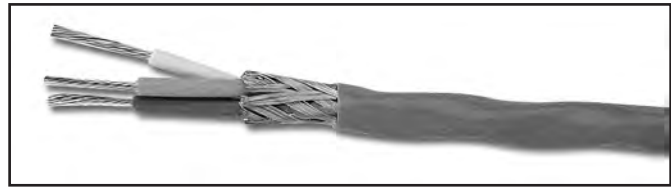
**Performance:**

**Voltage rating:** 600V.

**Temperature ratings:**

Cables with /7 component wires: -55 to 200° C.  
Cables with /8 component wires: -55 to 260° C.

See page 38 for component wire dimensions.



**Construction Details**

**Component wire conductor:**

/7 component wires: Silver-plated copper;  
/8 component wires: Nickel-plated copper.

**Component wire insulation:**

Extruded PTFE with abrasion-resistant mineral fillers.

**Shield:** Nickel- or silver-plated copper braid, 85% coverage.

**Jacket:** Extruded PFA or PTFE tape.

**Colors:** Color coded to M27500 (see page 67).

Certifications also available to NEMA WC27500.

**Part Numbers:**

**M27500 - 8 TA 1 N 06**

Component wire AWG  
Component wire type  
**SA:** MIL-W-22759/7  
**TA:** MIL-W-22759/8

Jacket material—**06:** White PTFE tape  
**20:** White extruded PFA  
**S:** Silver-plated copper  
**21:** Clear extruded PFA  
Shield material—**N:** Nickel-plated copper  
Number of component wires

**Dimensions and Weight—1 Conductor Cables**

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
8 (133/29)	.240 (6.10)	.264 (6.71)	95.9 (143)
10 (37/26)	.178 (4.52)	.202 (5.13)	56.2 (83.6)
12 (19/25)	.154 (3.91)	.178 (4.52)	41.9 (62.4)
14 (19/27)	.135 (3.43)	.159 (4.04)	30.0 (44.6)
16 (19/29)	.122 (3.10)	.146 (3.71)	23.7 (35.3)
18 (19/30)	.112 (2.84)	.134 (3.40)	20.6 (30.7)
20 (19/32)	.102 (2.59)	.126 (3.20)	16.6 (24.7)
22 (19/34)	.093 (2.36)	.117 (2.97)	13.9 (20.7)
24 (19/36)	.082 (2.08)	.106 (2.69)	11.1 (16.5)

**Dimensions and Weight—2 Conductor Cables**

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
8 (133/29)	.468 (11.9)	.504 (12.8)	199 (296)
10 (37/26)	.344 (8.74)	.380 (9.65)	112 (166)
12 (19/25)	.288 (7.32)	.312 (7.92)	79.4 (118)
14 (19/27)	.250 (6.35)	.274 (6.96)	58.6 (87.2)
16 (19/29)	.224 (5.69)	.248 (6.30)	46.1 (68.6)
18 (19/30)	.204 (5.18)	.228 (5.79)	39.0 (58.0)
20 (19/32)	.184 (4.67)	.208 (5.28)	31.5 (46.9)
22 (19/34)	.166 (4.22)	.190 (4.83)	25.7 (38.2)
24 (19/36)	.144 (3.66)	.168 (4.27)	20.5 (30.6)

**Dimensions and Weight—3 Conductor Cables\***

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
8 (133/29)	.501 (12.7)	.537 (13.6)	283 (421)
10 (37/26)	.368 (9.34)	.404 (10.3)	162 (241)
12 (19/25)	.308 (7.83)	.344 (8.74)	114 (169)
14 (19/27)	.267 (6.79)	.291 (7.40)	81.6 (121)
16 (19/29)	.239 (6.08)	.263 (6.69)	62.5 (93.0)
18 (19/30)	.218 (5.53)	.242 (6.14)	52.8 (78.6)
20 (19/32)	.196 (4.99)	.220 (5.60)	42.2 (62.8)
22 (19/34)	.177 (4.49)	.201 (5.10)	33.8 (50.3)
24 (19/36)	.153 (3.89)	.177 (4.50)	26.6 (39.6)

**Dimensions and Weight—4 Conductor Cables**

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
8 (133/29)	.558 (14.2)	.594 (15.1)	378 (562)
10 (37/26)	.409 (10.4)	.445 (11.3)	208 (309)
12 (19/25)	.351 (8.91)	.387 (9.83)	153 (227)
14 (19/27)	.297 (7.55)	.333 (8.46)	106 (157)
16 (19/29)	.266 (6.75)	.290 (7.36)	79.2 (117)
18 (19/30)	.242 (6.14)	.266 (6.75)	66.2 (98.5)
20 (19/32)	.218 (5.53)	.242 (6.14)	52.4 (78.0)
22 (19/34)	.196 (4.98)	.220 (5.59)	41.6 (61.9)
24 (19/36)	.169 (4.30)	.193 (4.91)	32.4 (48.2)

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). All values are nominal, for style 06 (PTFE tape jacket) cables.

\*Using factors from a circumscribed circle per M27500.

# M27500 Cables—types RC and RE (M22759/11, /12 components)



## Construction Details

### Component wire conductor:

/11 component wires: Silver-plated copper;  
/12 component wires: Nickel-plated copper.

**Component wire insulation:** Extruded PTFE.

**Shield:** Nickel- or silver-plated copper braid, 85% coverage.

**Jacket:** Extruded FEP or PTFE tape.

**Colors:** Color coded to M27500 (see page 67).

Certifications also available to NEMA WC27500.

**M27500 RC and RE cables** are shielded and jacketed cables with PTFE tape or extruded FEP jackets, incorporating MIL-W-22759/11 or /12 wires.

These component wires have extruded PTFE insulation and silver- or nickel-plated copper conductors.

PTFE tape jackets are available with our unique **Seamless Wrap** PTFE tape (see page 87 for details).

### Performance:

**Voltage rating:** 600V.

### Temperature ratings:

Cables with /11 component wires and either jacket: -55 to 200° C.

Cables with /12 component wires and PTFE jacket: -55 to 260° C.

Cables with /12 component wires and FEP jacket: -55 to 200° C.

**See page 40 for component wire dimensions.**

### Part Numbers:

**M27500 - 8 RC 1 S 06**

Component wire AWG

Component wire type

**RC:** MIL-W-22759/11

**RE:** MIL-W-22759/12

Jacket material—**05:** Clear extruded FEP

Shield material—**06:** White PTFE tape

**N:** Nickel-plated copper

**S:** Silver-plated copper

Number of component wires

**09:** White extruded FEP

## Dimensions and Weight—1 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
8 (133/29)	.222 (5.64)	.246 (6.25)	83.3 (124)
10 (37/26)	.155 (3.94)	.179 (4.55)	47.8 (71.1)
12 (19/25)	.127 (3.23)	.149 (3.78)	32.2 (47.9)
14 (19/27)	.106 (2.69)	.128 (3.25)	22.6 (33.6)
16 (19/29)	.091 (2.31)	.113 (2.87)	16.5 (24.6)
18 (19/30)	.084 (2.13)	.106 (2.69)	14.5 (21.6)
20 (19/32)	.074 (1.88)	.096 (2.44)	11.0 (16.4)
22 (19/34)	.065 (1.65)	.087 (2.21)	8.90 (13.2)
24 (19/36)	.059 (1.50)	.081 (2.06)	7.01 (10.4)
26 (19/38)	.054 (1.37)	.076 (1.93)	6.20 (9.23)
28 (7/36)	.049 (1.24)	.071 (1.80)	5.50 (8.19)

## Dimensions and Weight—2 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
8 (133/29)	.432 (11.0)	.468 (11.9)	170 (253)
10 (37/26)	.298 (7.57)	.335 (8.51)	95.4 (142)
12 (19/25)	.238 (6.05)	.262 (6.65)	64.6 (96.1)
14 (19/27)	.196 (4.98)	.220 (5.59)	44.9 (66.8)
16 (19/29)	.166 (4.22)	.190 (4.83)	32.1 (47.8)
18 (19/30)	.152 (3.86)	.176 (4.47)	27.2 (40.5)
20 (19/32)	.132 (3.35)	.156 (3.96)	19.4 (28.9)
22 (19/34)	.114 (2.90)	.136 (3.45)	14.6 (21.7)
24 (19/36)	.102 (2.59)	.124 (3.15)	12.2 (18.2)
26 (19/38)	.092 (2.34)	.114 (2.90)	9.93 (14.8)
28 (7/36)	.082 (2.08)	.104 (2.64)	8.39 (12.5)

## Dimensions and Weight—3 Conductor Cables\*

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
8 (133/29)	.462 (11.7)	.498 (12.7)	248 (369)
10 (37/26)	.319 (8.10)	.356 (9.04)	138 (205)
12 (19/25)	.255 (6.47)	.280 (7.10)	90.9 (135)
14 (19/27)	.210 (5.32)	.234 (5.93)	61.7 (91.8)
16 (19/29)	.177 (4.50)	.201 (5.11)	43.7 (65.0)
18 (19/30)	.162 (4.12)	.186 (4.73)	37.0 (55.1)
20 (19/32)	.141 (3.57)	.163 (4.14)	26.2 (39.0)
22 (19/34)	.121 (3.08)	.143 (3.63)	19.3 (28.7)
24 (19/36)	.108 (2.75)	.132 (3.36)	15.5 (23.1)
26 (19/38)	.098 (2.48)	.122 (3.09)	12.9 (19.2)
28 (7/36)	.087 (2.21)	.109 (2.77)	10.2 (15.2)

## Dimensions and Weight—4 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
8 (133/29)	.515 (13.1)	.551 (14.0)	340 (506)
10 (37/26)	.355 (9.02)	.391 (9.93)	179 (266)
12 (19/25)	.288 (7.30)	.324 (8.22)	120 (179)
14 (19/27)	.233 (5.92)	.257 (6.53)	78.6 (117)
16 (19/29)	.197 (5.00)	.221 (5.61)	52.6 (78.3)
18 (19/30)	.180 (4.57)	.204 (5.18)	46.5 (69.2)
20 (19/32)	.156 (3.96)	.184 (4.67)	34.4 (51.2)
22 (19/34)	.134 (3.41)	.156 (3.96)	23.9 (35.6)
24 (19/36)	.120 (3.04)	.142 (3.61)	19.0 (28.3)
26 (19/38)	.108 (2.73)	.130 (3.30)	15.4 (22.9)
28 (7/36)	.096 (2.43)	.118 (3.00)	12.3 (18.3)

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). All values are nominal. \*Using factors from a circumscribed circle per M27500.

# M27500 Cables—types TE and TF (M22759/16, /17 components)

**M27500 TE and TF cables** are shielded and jacketed cables with extruded ETFE (Ethylene Tetrafluoroethylene) jackets, incorporating MIL-W-22759/16 or /17 wires.

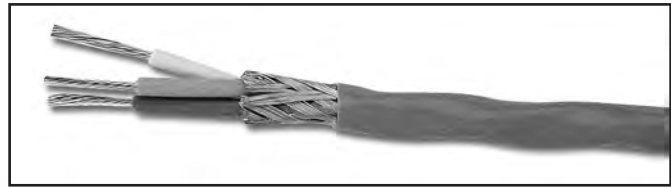
These component wires are insulated with extruded ETFE, and have either tin-plated copper or silver-plated high-strength copper alloy conductors.

**Performance:**

**Voltage rating:** 600V.

**Temperature rating:** -55 to 150° C.

See page 41 for component wire dimensions.



**Construction Details**

**Component wire conductor:**

/16 component wires: Tin-plated copper;  
/17 component wires: Silver-plated high-strength copper alloy.

**Component wire insulation:** Extruded ETFE.

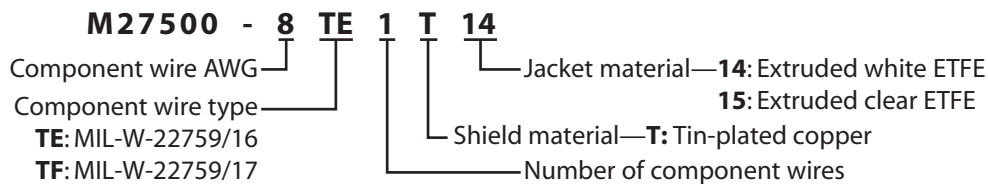
**Shield:** Tin-plated copper braid, 85% coverage.

**Jacket:** Extruded ETFE.

**Colors:** Color coded to M27500 (see page 67).

Certifications also available to NEMA WC27500.

**Part Numbers:**



**Dimensions and Weight—1 Conductor Cables**

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
8 (133/29)	.217 (5.51)	.245 (6.22)	77.8 (116)
10 (37/26)	.155 (3.94)	.178 (4.52)	44.6 (66.4)
12 (37/28)	.130 (3.30)	.152 (3.86)	30.4 (45.2)
14 (19/27)	.109 (2.77)	.131 (3.33)	21.8 (32.4)
16 (19/29)	.095 (2.41)	.116 (2.95)	15.9 (23.7)
18 (19/30)	.087 (2.21)	.107 (2.72)	13.6 (20.2)
20 (19/32)	.076 (1.93)	.096 (2.44)	10.0 (14.9)
22 (19/34)	.068 (1.73)	.088 (2.20)	8.25 (12.3)
24 (19/36)	.061 (1.55)	.081 (2.06)	7.08 (10.5)

**Dimensions and Weight—2 Conductor Cables**

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
8 (133/29)	.426 (10.8)	.462 (11.7)	159 (296)
10 (37/26)	.298 (7.57)	.334 (8.48)	92.1 (166)
12 (37/28)	.244 (6.20)	.268 (6.81)	60.3 (118)
14 (19/27)	.202 (5.13)	.226 (5.74)	42.6 (87.2)
16 (19/29)	.174 (4.42)	.198 (5.03)	31.1 (68.6)
18 (19/30)	.158 (4.01)	.182 (4.62)	26.1 (58.0)
20 (19/32)	.136 (3.45)	.156 (3.96)	18.9 (46.9)
22 (19/34)	.120 (3.05)	.140 (3.56)	14.6 (38.2)
24 (19/36)	.106 (2.69)	.126 (3.20)	11.4 (30.6)

**Dimensions and Weight—3 Conductor Cables\***

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
8 (133/29)	.456 (11.6)	.492 (12.5)	230 (342)
10 (37/26)	.319 (8.10)	.354 (8.99)	133 (198)
12 (37/28)	.261 (6.63)	.290 (7.37)	85.5 (127)
14 (19/27)	.216 (5.49)	.244 (6.20)	59.6 (88.7)
16 (19/29)	.186 (4.72)	.214 (5.44)	42.7 (63.5)
18 (19/30)	.169 (4.28)	.197 (5.00)	35.6 (53.0)
20 (19/32)	.145 (3.68)	.167 (4.24)	24.8 (36.9)
22 (19/34)	.128 (3.25)	.150 (3.81)	19.3 (28.7)
24 (19/36)	.113 (2.86)	.135 (3.43)	14.9 (22.2)

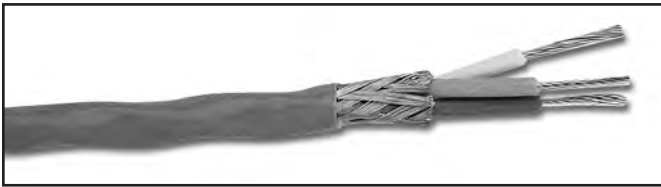
**Dimensions and Weight—4 Conductor Cables**

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
8 (133/29)	.508 (12.9)	.544 (13.8)	308 (458)
10 (37/26)	.355 (9.02)	.392 (9.96)	172 (256)
12 (37/28)	.295 (7.49)	.331 (8.40)	114 (170)
14 (19/27)	.240 (6.10)	.264 (6.71)	76.1 (113)
16 (19/29)	.206 (5.24)	.230 (5.85)	54.2 (80.7)
18 (19/30)	.187 (4.75)	.211 (5.36)	45.0 (67.0)
20 (19/32)	.161 (4.08)	.185 (4.69)	32.4 (48.2)
22 (19/34)	.141 (3.59)	.165 (4.20)	24.5 (36.5)
24 (19/36)	.124 (3.16)	.148 (3.77)	19.4 (28.9)

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). All values are nominal. \*Using factors from a circumscribed circle per M27500.



# M27500 Cables—types TG and TH (M22759/18, /19 components)



## Construction Details

### Component wire conductor:

/18 component wires: Tin-plated copper;  
/19 component wires: Silver-plated high-strength copper alloy.

**Component wire insulation:** Thin-wall extruded ETFE.

**Shield:** Tin-plated copper braid, 85% coverage.

**Jacket:** Extruded ETFE.

**Colors:** Color coded to M27500 (see page 67).

Certifications also available to NEMA WC27500.

**M27500 TG and TH cables** are shielded and jacketed cables with extruded ETFE (Ethylene Tetrafluoroethylene) jackets, incorporating MIL-W-22759/18 or /19 wires.

These component wires are insulated with thin-wall extruded ETFE for weight and space savings, and have either tin-plated copper or silver-plated high-strength copper alloy conductors.

## Performance:

**Voltage rating:** 600V.

**Temperature rating:** -55 to 150° C.

See page 42 for component wire dimensions.

## Part Numbers:

**M27500 - 10 TG 1 T 14**

Component wire AWG — 10  
Component wire type — TG: MIL-W-22759/18  
TH: MIL-W-22759/19  
Shield material — T: Tin-plated copper  
Jacket material — 14: Extruded white ETFE  
15: Extruded clear ETFE  
Number of component wires — 14

## Dimensions and Weight—1 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
10 (37/26)	.150 (3.81)	.172 (4.37)	43.5 (64.7)
12 (37/28)	.123 (3.12)	.143 (3.63)	29.8 (44.3)
14 (19/27)	.101 (2.57)	.121 (3.07)	20.8 (31.0)
16 (19/29)	.086 (2.18)	.106 (2.69)	14.9 (22.2)
18 (19/30)	.077 (1.96)	.097 (2.46)	11.9 (17.7)
20 (19/32)	.067 (1.70)	.087 (2.21)	9.21 (13.7)
22 (19/34)	.059 (1.50)	.079 (2.01)	6.76 (10.1)
24 (19/36)	.052 (1.32)	.072 (1.83)	5.66 (8.42)
26 (19/38)	.048 (1.22)	.068 (1.73)	5.21 (7.75)

## Dimensions and Weight—2 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
10 (37/26)	.288 (7.32)	.313 (7.95)	91.3 (136)
12 (37/28)	.230 (5.84)	.255 (6.48)	58.8 (87.5)
14 (19/27)	.186 (4.72)	.211 (5.36)	39.8 (59.2)
16 (19/29)	.156 (3.96)	.181 (4.60)	28.2 (42.0)
18 (19/30)	.138 (3.51)	.160 (4.06)	23.1 (34.4)
20 (19/32)	.118 (3.00)	.140 (3.56)	17.5 (26.0)
22 (19/34)	.102 (2.59)	.124 (3.15)	12.4 (18.5)
24 (19/36)	.088 (2.24)	.110 (2.79)	9.29 (13.8)
26 (19/38)	.080 (2.03)	.102 (2.59)	8.05 (12.0)

## Dimensions and Weight—3 Conductor Cables\*

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
10 (37/26)	.308 (7.83)	.345 (8.76)	129 (192)
12 (37/28)	.246 (6.25)	.275 (6.99)	83.1 (124)
14 (19/27)	.199 (5.05)	.227 (5.77)	55.7 (82.9)
16 (19/29)	.167 (4.25)	.195 (4.95)	39.4 (58.6)
18 (19/30)	.147 (3.74)	.169 (4.29)	30.9 (46.0)
20 (19/32)	.126 (3.19)	.148 (3.76)	22.2 (33.0)
22 (19/34)	.108 (2.75)	.130 (3.30)	16.5 (24.6)
24 (19/36)	.093 (2.37)	.115 (2.92)	12.3 (18.3)
26 (19/38)	.085 (2.15)	.107 (2.72)	9.84 (14.6)

## Dimensions and Weight—4 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
10 (37/26)	.343 (8.71)	.382 (9.70)	169 (252)
12 (37/28)	.278 (7.06)	.304 (7.72)	111 (165)
14 (19/27)	.221 (5.61)	.246 (6.24)	71.6 (107)
16 (19/29)	.185 (4.69)	.213 (5.41)	49.3 (73.4)
18 (19/30)	.163 (4.14)	.191 (4.85)	39.9 (59.4)
20 (19/32)	.139 (3.53)	.161 (4.09)	27.2 (40.5)
22 (19/34)	.120 (3.04)	.142 (3.61)	19.8 (29.5)
24 (19/36)	.103 (2.61)	.125 (3.18)	15.3 (22.8)
26 (19/38)	.093 (2.37)	.115 (2.92)	12.1 (18.0)

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). All values are nominal. \*Using factors from a circumscribed circle per M27500.

# M27500 Cables—type WB (M22759/80 components)

**M27500 WB cables** are shielded and jacketed cables with a jacket of FEP/polyimide tape covered by a PTFE tape outer layer, incorporating MIL-DTL-22759/80 wires.

These component wires have a light-weight composite insulation of PTFE/polyimide/PTFE tape, covered with PTFE tape, and tin-plated copper conductors.

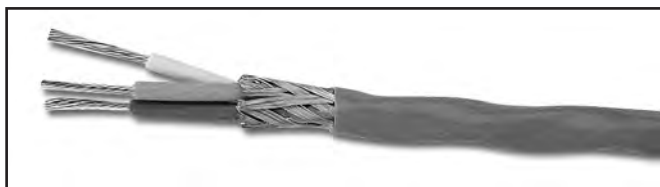
These cables can be supplied with **Seamless Wrap** PTFE tape component wire insulation and jacket (see page 87 for details and part numbers).

## Performance:

**Voltage rating:** 600V.

**Temperature rating:** -55 to 150° C.

See page 47 for component wire dimensions.



## Construction Details

**Component wire conductor:** Tin-plated copper.

### Component wire insulation:

Inner layer: PTFE/polyimide/PTFE tape;

Outer layer: PTFE tape.

**Shield:** Tin-plated copper braid, 85% coverage.

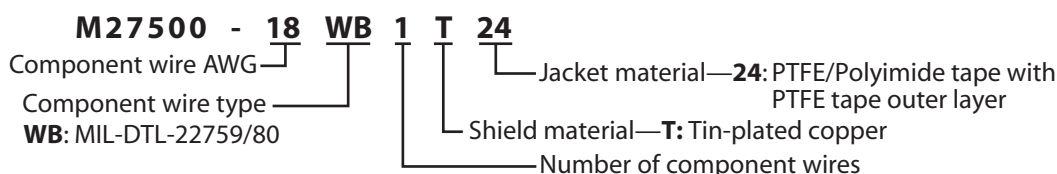
**Jacket:** Inner layer: FEP/polyimide tape;

Outer layer: PTFE tape.

**Colors:** Color coded to M27500 (see page 67).

Certifications also available to NEMA WC27500.

## Part Numbers:



## Dimensions and Weight—1 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
10 (37/26)	.137 (3.48)	.146 (3.70)	48.4 (57.1)
12 (37/28)	.114 (2.90)	.123 (3.12)	26.32 (39.0)
14 (19/27)	.094 (2.39)	.103 (2.61)	18.0 (26.8)
16 (19/29)	.081 (2.06)	.090 (2.28)	13.0 (19.4)
18 (19/30)	.074 (1.88)	.083 (2.10)	11.1 (16.5)
20 (19/32)	.066 (1.68)	.075 (1.90)	8.17 (12.2)
22 (19/34)	.058 (1.47)	.067 (1.69)	6.17 (9.18)
24 (19/36)	.052 (1.32)	.061 (1.54)	5.07 (7.54)
26 (19/38)	.048 (1.22)	.057 (1.44)	4.62 (6.88)

## Dimensions and Weight—2 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
10 (37/26)	.262 (6.65)	.271 (6.87)	74.7 (111)
12 (37/28)	.212 (5.38)	.221 (5.60)	50.2 (74.7)
14 (19/27)	.172 (4.37)	.181 (4.59)	34.2 (50.9)
16 (19/29)	.146 (3.71)	.155 (3.93)	24.3 (36.1)
18 (19/30)	.132 (3.35)	.141 (3.57)	20.3 (30.1)
20 (19/32)	.116 (2.95)	.125 (3.17)	14.8 (22.1)
22 (19/34)	.100 (2.54)	.109 (2.76)	10.8 (16.1)
24 (19/36)	.088 (2.24)	.097 (2.45)	8.24 (12.3)
26 (19/38)	.080 (2.03)	.089 (2.25)	6.67 (9.93)

## Dimensions and Weight—3 Conductor Cables\*

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
10 (37/26)	.280 (7.12)	.289 (7.34)	110 (164)
12 (37/28)	.227 (5.76)	.235 (5.98)	71.4 (106)
14 (19/27)	.184 (4.67)	.192 (4.89)	47.9 (71.3)
16 (19/29)	.156 (3.96)	.164 (4.18)	33.9 (50.4)
18 (19/30)	.141 (3.57)	.149 (3.79)	27.9 (41.6)
20 (19/32)	.124 (3.14)	.132 (3.36)	20.1 (30.0)
22 (19/34)	.106 (2.70)	.115 (2.92)	14.5 (21.5)
24 (19/36)	.093 (2.37)	.102 (2.59)	10.5 (15.6)
26 (19/38)	.085 (2.15)	.093 (2.37)	8.76 (13.0)

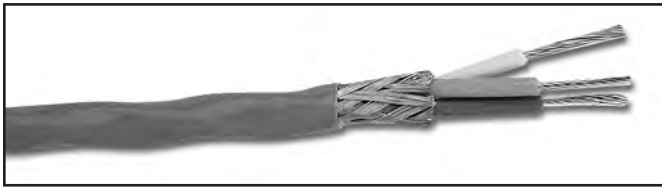
## Dimensions and Weight—4 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
10 (37/26)	.312 (7.9)	.324 (8.23)	143 (213)
12 (37/28)	.256 (6.5)	.265 (6.73)	93.1 (138)
14 (19/27)	.204 (5.2)	.213 (5.40)	61.8 (92.0)
16 (19/29)	.173 (4.4)	.181 (4.60)	43.4 (64.6)
18 (19/30)	.156 (4.0)	.164 (4.18)	35.5 (52.9)
20 (19/32)	.137 (3.5)	.145 (3.69)	25.6 (38.0)
22 (19/34)	.117 (3.0)	.126 (3.20)	18.1 (27.0)
24 (19/36)	.103 (2.6)	.111 (2.83)	13.1 (19.4)
26 (19/38)	.093 (2.4)	.102 (2.58)	10.6 (15.7)

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). All values are nominal. \*Using factors from a circumscribed circle per M27500.



# M27500 Cables—types WC and WE (M22759/81, /82 components)



## Construction Details

### Component wire conductor:

/81 component wires: Silver-plated high-strength copper alloy;

/82 component wires: Nickel-plated high-strength copper alloy.

### Component wire insulation:

Inner layer: PTFE/polyimide/PTFE tape;

Outer layer: PTFE tape.

**Shield:** Nickel-plated copper braid, 85% coverage.

**Jacket:** Inner layer: FEP/polyimide tape;

Outer layer: PTFE tape.

**Colors:** Color coded to M27500 (see page 67).

Certifications also available to NEMA WC27500.

**M27500 WC and WE cables** are shielded and jacketed cables with a jacket of FEP/polyimide tape covered by a PTFE tape outer layer, incorporating MIL-DTL-22759/81 or /82 wires.

These component wires have a light-weight composite insulation of PTFE/polyimide/PTFE tape, covered with PTFE tape, and silver- or nickel-plated high-strength copper alloy conductors.

These cables can be supplied with **Seamless Wrap** PTFE tape component wire insulation and jacket (see page 87 for details and part numbers).

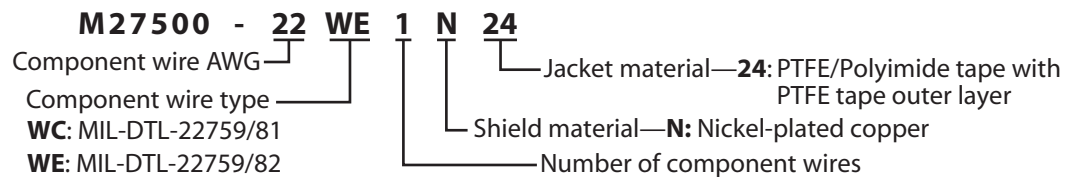
### Performance:

**Voltage rating:** 600V.

**Temperature rating:** -55 to 200° C.

**See page 47 for component wire dimensions.**

## Part Numbers:



## Dimensions and Weight—1 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
20 (19/32)	.066 (1.68)	.075 (1.90)	8.17 (12.2)
22 (19/34)	.058 (1.47)	.067 (1.69)	6.17 (9.18)
24 (19/36)	.052 (1.32)	.061 (1.54)	5.07 (7.54)
26 (19/38)	.048 (1.22)	.057 (1.44)	4.62 (6.88)

## Dimensions and Weight—2 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
20 (19/32)	.116 (2.95)	.125 (3.17)	14.8 (22.1)
22 (19/34)	.100 (2.54)	.109 (2.76)	10.8 (16.1)
24 (19/36)	.088 (2.24)	.097 (2.45)	8.24 (12.3)
26 (19/38)	.080 (2.03)	.089 (2.25)	6.67 (9.93)

## Dimensions and Weight—3 Conductor Cables\*

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
20 (19/32)	.124 (3.14)	.132 (3.36)	20.1 (30.0)
22 (19/34)	.106 (2.70)	.115 (2.92)	14.5 (21.5)
24 (19/36)	.093 (2.37)	.102 (2.59)	10.5 (15.6)
26 (19/38)	.085 (2.15)	.093 (2.37)	8.76 (13.0)

## Dimensions and Weight—4 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
20 (19/32)	.137 (3.5)	.145 (3.69)	25.6 (38.0)
22 (19/34)	.117 (3.0)	.126 (3.20)	18.1 (27.0)
24 (19/36)	.103 (2.6)	.111 (2.83)	13.1 (19.4)
26 (19/38)	.093 (2.4)	.102 (2.58)	10.6 (15.7)

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). All values are nominal. \*Using factors from a circumscribed circle per M27500.

# M27500 Cables—types WJ, WK, and WL (M22759/86, /87, /88 components)

**M27500 WJ, WK, and WL cables** are shielded and jacketed cables with a jacket of FEP/polyimide tape covered by a PTFE tape outer layer, incorporating MIL-DTL-22759/86, /87, or /88 wires. These component wires have a light-weight composite insulation of PTFE/polyimide/PTFE tape, covered with PTFE tape, and silver, nickel, or tin-plated copper conductors.

These cables can be supplied with **Seamless Wrap** PTFE tape component wire insulation and jacket (see page 87 for details and part numbers).

## Performance:

**Voltage rating:** 600V.

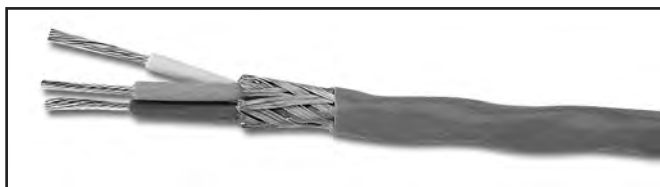
## Temperature rating:

Cables with /86 component wires: -55 to 200° C.

Cables with /87 component wires: -55 to 260° C.

Cables with /88 component wires: -55 to 150° C.

See pages 45–47 for component wire dimensions.



## Construction Details

### Component wire conductor:

/86 component wires: Silver-plated copper;

/87 component wires: Nickel-plated copper;

/88 component wires: Tin-plated copper.

### Component wire insulation:

Inner layer: PTFE/polyimide/PTFE tape;

Outer layer: PTFE tape.

**Shield:** Nickel- or silver-plated copper braid, 85% coverage.

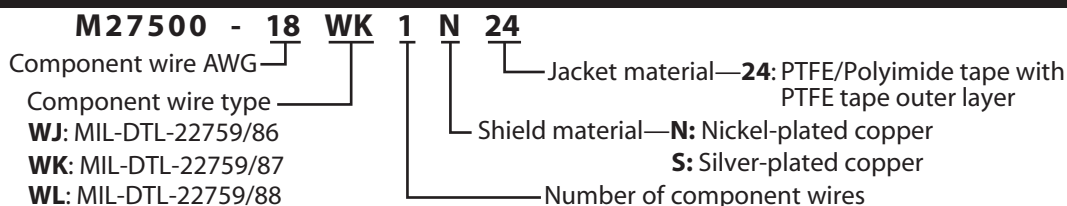
**Jacket:** Inner layer: FEP/polyimide tape;

Outer layer: PTFE tape.

**Colors:** Color coded to M27500 (see page 67).

Certifications also available to NEMA WC27500.

## Part Numbers:



## Dimensions and Weight—1 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
10 (37/26)	.137 (3.48)	.146 (3.70)	48.4 (57.1)
12 (37/28)	.114 (2.90)	.123 (3.12)	26.32(39.0)
14 (19/27)	.094 (2.39)	.103 (2.61)	18.0 (26.8)
16 (19/29)	.081 (2.06)	.090 (2.28)	13.0 (19.4)
18 (19/30)	.074 (1.88)	.083 (2.10)	11.1 (16.5)
20 (19/32)	.066 (1.68)	.075 (1.90)	8.17 (12.2)
22 (19/34)	.058 (1.47)	.067 (1.69)	6.17 (9.18)
24 (19/36)	.052 (1.32)	.061 (1.54)	5.07 (7.54)
26 (19/38)	.048 (1.22)	.057 (1.44)	4.62 (6.88)

## Dimensions and Weight—2 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
10 (37/26)	.262 (6.65)	.271 (6.87)	74.7 (111)
12 (37/28)	.212 (5.38)	.221 (5.60)	50.2 (74.7)
14 (19/27)	.172 (4.37)	.181 (4.59)	34.2 (50.9)
16 (19/29)	.146 (3.71)	.155 (3.93)	24.3 (36.1)
18 (19/30)	.132 (3.35)	.141 (3.57)	20.3 (30.1)
20 (19/32)	.116 (2.95)	.125 (3.17)	14.8 (22.1)
22 (19/34)	.100 (2.54)	.109 (2.76)	10.8 (16.1)
24 (19/36)	.088 (2.24)	.097 (2.45)	8.24 (12.3)
26 (19/38)	.080 (2.03)	.089 (2.25)	6.67 (9.93)

## Dimensions and Weight—3 Conductor Cables\*

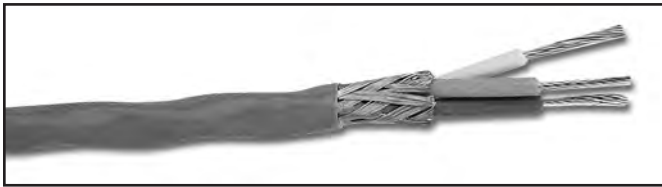
Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
10 (37/26)	.280 (7.12)	.289 (7.34)	110 (164)
12 (37/28)	.227 (5.76)	.235 (5.98)	71.4 (106)
14 (19/27)	.184 (4.67)	.192 (4.89)	47.9 (71.3)
16 (19/29)	.156 (3.96)	.164 (4.18)	33.9 (50.4)
18 (19/30)	.141 (3.57)	.149 (3.79)	27.9 (41.6)
20 (19/32)	.124 (3.14)	.132 (3.36)	20.1 (30.0)
22 (19/34)	.106 (2.70)	.115 (2.92)	14.5 (21.5)
24 (19/36)	.093 (2.37)	.102 (2.59)	10.5 (15.6)
26 (19/38)	.085 (2.15)	.093 (2.37)	8.76 (13.0)

## Dimensions and Weight—4 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
10 (37/26)	.312 (7.9)	.324 (8.23)	143 (213)
12 (37/28)	.256 (6.5)	.265 (6.73)	93.1 (138)
14 (19/27)	.204 (5.2)	.213 (5.40)	61.8 (92.0)
16 (19/29)	.173 (4.4)	.181 (4.60)	43.4 (64.6)
18 (19/30)	.156 (4.0)	.164 (4.18)	35.5 (52.9)
20 (19/32)	.137 (3.5)	.145 (3.69)	25.6 (38.0)
22 (19/34)	.117 (3.0)	.126 (3.20)	18.1 (27.0)
24 (19/36)	.103 (2.6)	.111 (2.83)	13.1 (19.4)
26 (19/38)	.093 (2.4)	.102 (2.58)	10.6 (15.7)

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). All values are nominal. \*Using factors from a circumscribed circle per M27500.

# M27500 Cables—types WM and WN (M22759/89, /90 components)



## Construction Details

### Component wire conductor:

/89 component wires: Silver-plated high-strength copper alloy;

/90 component wires: Nickel-plated high-strength copper alloy.

**Note:** AWG 26 wires with either plating have ultra-high-strength copper alloy conductors.

### Component wire insulation:

Inner layer: PTFE/polyimide/PTFE tape;

Outer layer: PTFE tape.

**Shield:** Nickel- or silver-plated copper braid, 85% coverage.

**Jacket:** Inner layer: FEP/polyimide tape;  
Outer layer: PTFE tape.

**Colors:** Color coded to M27500 (see page 67).

Certifications also available to NEMA WC27500.

**M27500 WM and WN cables** are shielded and jacketed cables with a jacket of FEP/polyimide tape covered by a PTFE tape outer layer, incorporating MIL-DTL-22759/89 or /90 wires.

These component wires have a light-weight composite insulation of PTFE/polyimide/PTFE tape, covered with PTFE tape, and silver- or nickel-plated high-strength copper alloy conductors.

These cables can be supplied with **Seamless Wrap** PTFE tape component wire insulation and jacket (see page 87 for details and part numbers).

## Performance:

**Voltage rating:** 600V.

### Temperature rating:

Cables with /89 component wires: -55 to 200° C.

Cables with /90 component wires: -55 to 260° C.

**See page 52 for component wire dimensions.**

## Part Numbers:

**M27500 - 22 WN 1 N 24**

Component wire AWG

Component wire type

**WM:** MIL-DTL-22759/89

**WN:** MIL-DTL-22759/90

Jacket material—**24:** PTFE/Polyimide tape with PTFE tape outer layer

Shield material—**N:** Nickel-plated copper  
**S:** Silver-plated copper

Number of component wires

## Dimensions and Weight—1 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
20 (19/32)	.066 (1.68)	.075 (1.90)	8.17 (12.2)
22 (19/34)	.058 (1.47)	.067 (1.69)	6.17 (9.18)
24 (19/36)	.052 (1.32)	.061 (1.54)	5.07 (7.54)
26 (19/38)	.048 (1.22)	.057 (1.44)	4.62 (6.88)

## Dimensions and Weight—2 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
20 (19/32)	.116 (2.95)	.125 (3.17)	14.8 (22.1)
22 (19/34)	.100 (2.54)	.109 (2.76)	10.8 (16.1)
24 (19/36)	.088 (2.24)	.097 (2.45)	8.24 (12.3)
26 (19/38)	.080 (2.03)	.089 (2.25)	6.67 (9.93)

## Dimensions and Weight—3 Conductor Cables\*

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
20 (19/32)	.124 (3.14)	.132 (3.36)	20.1 (30.0)
22 (19/34)	.106 (2.70)	.115 (2.92)	14.5 (21.5)
24 (19/36)	.093 (2.37)	.102 (2.59)	10.5 (15.6)
26 (19/38)	.085 (2.15)	.093 (2.37)	8.76 (13.0)

## Dimensions and Weight—4 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
20 (19/32)	.137 (3.5)	.145 (3.69)	25.6 (38.0)
22 (19/34)	.117 (3.0)	.126 (3.20)	18.1 (27.0)
24 (19/36)	.103 (2.6)	.111 (2.83)	13.1 (19.4)
26 (19/38)	.093 (2.4)	.102 (2.58)	10.6 (15.7)

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). All values are nominal. \*Using factors from a circumscribed circle per M27500.

# M27500 Cables—types WP and WR (M22759/91, /92 components)

**M27500 WP and WR cables** are shielded and jacketed cables with a jacket of FEP/polyimide tape covered by a PTFE tape outer layer, incorporating MIL-DTL-22759/91 or /92 wires.

These component wires have a light-weight composite insulation of PTFE/polyimide/PTFE tape, covered with PTFE tape, and silver- or nickel-plated copper conductors.

These cables can be supplied with **Seamless Wrap** PTFE tape component wire insulation and jacket (see page 87 for details and part numbers).

## Performance:

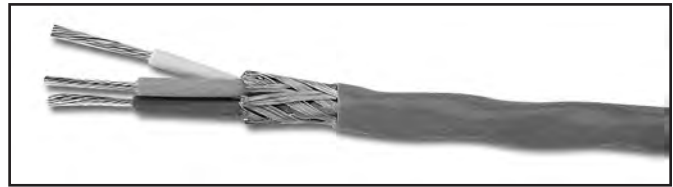
**Voltage rating:** 600V.

## Temperature rating:

Cables with /91 component wires: -55 to 200° C.

Cables with /92 component wires: -55 to 260° C.

See page 53 for component wire dimensions.



## Construction Details

### Component wire conductor:

/91 component wires: Silver-plated copper;

/92 component wires: Nickel-plated copper.

### Component wire insulation:

Inner layer: PTFE/polyimide/PTFE tape;

Outer layer: PTFE tape.

**Shield:** Nickel- or silver-plated copper braid, 85% coverage.

**Jacket:** Inner layer: FEP/polyimide tape;

Outer layer: PTFE tape.

**Colors:** Color coded to M27500 (see page 67).

Certifications also available to NEMA WC27500.

## Part Numbers:

**M27500 - 18 WR 1 N 24**

Component wire AWG

Component wire type

**WP:** MIL-DTL-22759/91

**WR:** MIL-DTL-22759/92

Jacket material—**24:** PTFE/Polyimide tape with PTFE tape outer layer

Shield material—**N:** Nickel-plated copper

**S:** Silver-plated copper

Number of component wires

## Dimensions and Weight—1 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
10 (37/26)	.137 (3.48)	.146 (3.70)	48.4 (57.1)
12 (37/28)	.114 (2.90)	.123 (3.12)	26.32(39.0)
14 (19/27)	.094 (2.39)	.103 (2.61)	18.0 (26.8)
16 (19/29)	.081 (2.06)	.090 (2.28)	13.0 (19.4)
18 (19/30)	.074 (1.88)	.083 (2.10)	11.1 (16.5)
20 (19/32)	.066 (1.68)	.075 (1.90)	8.17 (12.2)
22 (19/34)	.058 (1.47)	.067 (1.69)	6.17 (9.18)
24 (19/36)	.052 (1.32)	.061 (1.54)	5.07 (7.54)
26 (19/38)	.048 (1.22)	.057 (1.44)	4.62 (6.88)

## Dimensions and Weight—2 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
10 (37/26)	.262 (6.65)	.271 (6.87)	74.7 (111)
12 (37/28)	.212 (5.38)	.221 (5.60)	50.2 (74.7)
14 (19/27)	.172 (4.37)	.181 (4.59)	34.2 (50.9)
16 (19/29)	.146 (3.71)	.155 (3.93)	24.3 (36.1)
18 (19/30)	.132 (3.35)	.141 (3.57)	20.3 (30.1)
20 (19/32)	.116 (2.95)	.125 (3.17)	14.8 (22.1)
22 (19/34)	.100 (2.54)	.109 (2.76)	10.8 (16.1)
24 (19/36)	.088 (2.24)	.097 (2.45)	8.24 (12.3)
26 (19/38)	.080 (2.03)	.089 (2.25)	6.67 (9.93)

## Dimensions and Weight—3 Conductor Cables\*

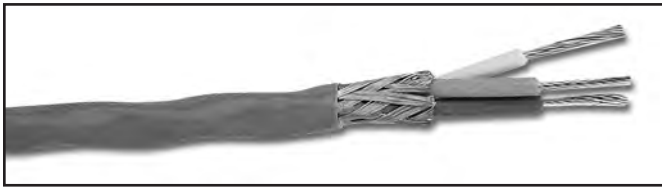
Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
10 (37/26)	.280 (7.12)	.289 (7.34)	110 (164)
12 (37/28)	.227 (5.76)	.235 (5.98)	71.4 (106)
14 (19/27)	.184 (4.67)	.192 (4.89)	47.9 (71.3)
16 (19/29)	.156 (3.96)	.164 (4.18)	33.9 (50.4)
18 (19/30)	.141 (3.57)	.149 (3.79)	27.9 (41.6)
20 (19/32)	.124 (3.14)	.132 (3.36)	20.1 (30.0)
22 (19/34)	.106 (2.70)	.115 (2.92)	14.5 (21.5)
24 (19/36)	.093 (2.37)	.102 (2.59)	10.5 (15.6)
26 (19/38)	.085 (2.15)	.093 (2.37)	8.76 (13.0)

## Dimensions and Weight—4 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
10 (37/26)	.312 (7.9)	.324 (8.23)	143 (213)
12 (37/28)	.256 (6.5)	.265 (6.73)	93.1 (138)
14 (19/27)	.204 (5.2)	.213 (5.40)	61.8 (92.0)
16 (19/29)	.173 (4.4)	.181 (4.60)	43.4 (64.6)
18 (19/30)	.156 (4.0)	.164 (4.18)	35.5 (52.9)
20 (19/32)	.137 (3.5)	.145 (3.69)	25.6 (38.0)
22 (19/34)	.117 (3.0)	.126 (3.20)	18.1 (27.0)
24 (19/36)	.103 (2.6)	.111 (2.83)	13.1 (19.4)
26 (19/38)	.093 (2.4)	.102 (2.58)	10.6 (15.7)

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). All values are nominal. \*Using factors from a circumscribed circle per M27500.

# M27500 Cables—type JA (M25038/1 components)



## Construction Details

**Component wire conductor:** 27% nickel-coated copper.

### Component wire insulation:

Inner: Inorganic dielectric.

Outer: PTFE tape fluid barrier. (Also available with our unique **Seamless Wrap** PTFE tape; see page 2 for details.)

**Shield:** Nickel-plated copper braid, 85% coverage; other materials available.

**Jacket:** PTFE tape.

**Colors:** Color coded to M27500 (see page 67).

Certifications also available to NEMA WC27500.

**M27500 JA cables** are shielded and jacketed cables with PTFE (polytetrafluoroethylene) tape jackets, incorporating MIL-W-25038/1 wires.

These high-temperature component wires are insulated with an inorganic dielectric, a PTFE-coated fiberglass fluid barrier, and have a fused high-performance PTFE tape jacket.

These cables are available with our unique **Seamless Wrap** PTFE tape jacket (see page 2 for details).

### Performance:

**Voltage rating:** 600V.

**Temperature rating:** -55 to 260° C.

See page 55 for component wire dimensions.

## Part Numbers:

**M27500 - 18 JA 1 N 06**

Component wire AWG — 18  
 Component wire type — JA: MIL-W-25038/1  
 Shield material — N: Nickel-plated copper (50 ")  
 Jacket material — 06: White PTFE tape  
 Number of component wires — 1

## Dimensions and Weight—1 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
12 (19/25)	.197 (5.00)	.219 (5.56)	50.9 (75.8)
14 (19/27)	.180 (4.57)	.202 (5.13)	40.0 (59.5)
16 (19/29)	.159 (4.04)	.181 (4.60)	32.1 (47.7)
18 (19/30)	.149 (3.78)	.171 (4.34)	27.3 (40.7)
20 (19/32)	.136 (3.45)	.158 (4.01)	23.9 (35.6)
22 (19/34)	.126 (3.20)	.148 (3.76)	20.7 (30.8)

## Dimensions and Weight—2 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
12 (19/25)	.371 (9.42)	.399 (10.1)	100 (149)
14 (19/27)	.337 (8.56)	.365 (9.27)	77.9 (116)
16 (19/29)	.295 (7.49)	.318 (8.08)	60.0 (89.3)
18 (19/30)	.275 (6.99)	.298 (7.57)	50.5 (75.1)
20 (19/32)	.249 (6.32)	.272 (6.91)	43.2 (64.3)
22 (19/34)	.229 (5.82)	.252 (6.40)	35.9 (53.4)

## Dimensions and Weight—3 Conductor Cables\*

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
12 (19/25)	.402 (10.2)	.430 (10.9)	146 (217)
14 (19/27)	.361 (9.16)	.389 (9.87)	108 (161)
16 (19/29)	.315 (8.01)	.343 (8.72)	85.4 (127)
18 (19/30)	.294 (7.47)	.317 (8.05)	69.1 (103)
20 (19/32)	.266 (6.76)	.289 (7.34)	59.0 (87.8)
22 (19/34)	.244 (6.21)	.267 (6.79)	48.2 (71.8)

## Dimensions and Weight—4 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
12 (19/25)	.447 (11.4)	.475 (12.1)	186 (277)
14 (19/27)	.406 (10.3)	.434 (11.0)	142 (211)
16 (19/29)	.351 (8.91)	.379 (9.62)	107 (159)
18 (19/30)	.327 (8.30)	.355 (9.01)	89.4 (133)
20 (19/32)	.295 (7.50)	.318 (8.09)	74.4 (111)
22 (19/34)	.271 (6.89)	.294 (7.47)	59.4 (88.4)

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). All values are nominal. \*Using factors from a circumscribed circle per M27500.



# M27500 Cables—type JF (M25038/3 components)

**M27500 JF cables** are shielded and jacketed cables with PTFE (polytetrafluoroethylene) tape jackets, incorporating MIL-W-25038/3 wires.

These high-temperature component wires are insulated with an inorganic dielectric, a PTFE/polyimide tape fluid barrier, and have a fused high-performance PTFE tape jacket.

A non-polyimide version is also available.

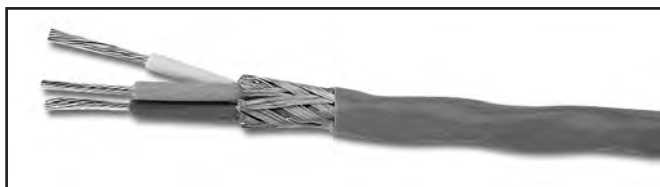
These cables are available with our unique **Seamless Wrap** PTFE tape jacket (see page 2 for details).

## Performance:

**Voltage rating:** 600V.

**Temperature rating:** -55 to 260° C.

See page 56 for component wire dimensions.



## Construction Details

### Component wire conductor:

12–18 AWG: 27% nickel-coated copper.

20–22 AWG: 27% nickel-coated high-strength copper alloy.

### Component wire insulation:

Inner: Inorganic dielectric.

Outer: PTFE/polyimide tape fluid barrier.

### Component wire jacket:

Fused high-performance PTFE tape.

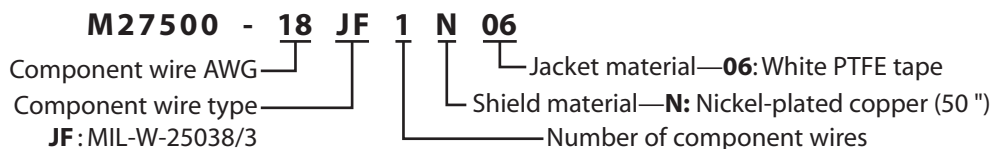
**Shield:** Nickel-plated copper braid, 85% coverage; other materials available.

**Jacket:** PTFE tape.

**Colors:** Color coded to M27500 (see page 67).

Certifications also available to NEMA WC27500.

## Part Numbers:



## Dimensions and Weight—1 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
12 (19/25)	.157 (3.99)	.179 (4.55)	40.2 (59.8)
14 (19/27)	.139 (3.53)	.161 (4.09)	30.1 (44.8)
16 (19/29)	.121 (3.07)	.143 (3.63)	24.5 (36.5)
18 (19/30)	.109 (2.77)	.131 (3.33)	18.3 (27.2)
20 (19/32)	.099 (2.51)	.121 (3.07)	15.3 (22.8)
22 (19/34)	.071 (1.80)	.093 (2.36)	10.6 (15.7)

## Dimensions and Weight—2 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
12 (19/25)	.291 (7.39)	.314 (8.00)	76.3 (114)
14 (19/27)	.255 (6.48)	.278 (7.06)	56.2 (83.6)
16 (19/29)	.219 (5.56)	.242 (6.15)	42.9 (63.9)
18 (19/30)	.195 (4.95)	.218 (5.54)	34.3 (51.0)
20 (19/32)	.175 (4.45)	.198 (5.03)	27.3 (40.6)
22 (19/34)	.129 (3.28)	.152 (3.86)	19.5 (29.0)

## Dimensions and Weight—3 Conductor Cables\*

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
12 (19/25)	.311 (7.90)	.339 (8.61)	110 (164)
14 (19/27)	.272 (6.92)	.295 (7.50)	77.9 (116)
16 (19/29)	.234 (5.94)	.257 (6.52)	56.9 (84.7)
18 (19/30)	.208 (5.28)	.231 (5.86)	46.4 (69.1)
20 (19/32)	.186 (4.73)	.209 (5.32)	36.6 (54.4)
22 (19/34)	.137 (3.48)	.160 (4.06)	26.2 (38.9)

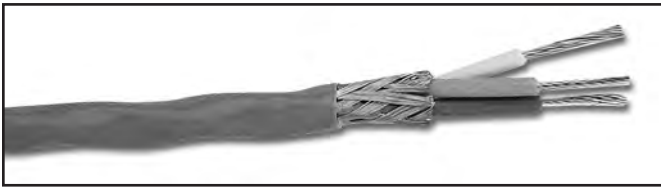
## Dimensions and Weight—4 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
12 (19/25)	.346 (8.79)	.374 (9.50)	140 (208)
14 (19/27)	.303 (7.69)	.331 (8.40)	101 (151)
16 (19/29)	.259 (6.58)	.282 (7.17)	71.5 (106)
18 (19/30)	.230 (5.85)	.253 (6.43)	58.2 (86.6)
20 (19/32)	.206 (5.24)	.229 (5.82)	45.2 (67.2)
22 (19/34)	.151 (3.83)	.174 (4.41)	32.1 (47.8)

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). All values are nominal. \*Using factors from a circumscribed circle per M27500.



# M27500 Cables—types MR and MS (M81381/7, /8 components)



## Construction Details

### Component wire conductor:

/7 component wires: Silver-plated copper;  
/8 component wires: Nickel-plated copper.

### Component wire insulation:

Two layers of FEP/polyimide/FEP tape with modified aromatic polyimide coating.

**Shield:** Nickel- or silver-plated copper braid, 85% coverage.

**Jacket:** Natural polyimide/FEP tape, wrapped and heat sealed, with polyimide outer surface.

**Colors:** Color coded to M27500 (see page 67).

Certifications also available to NEMA WC27500.

**M27500 MR and MS cables** are shielded and jacketed cables with a jacket of FEP/polyimide tape, incorporating MIL-DTL-81381/7 or /8 wires.

These component wires have a light-weight insulation of two layers of FEP/polyimide/FEP tape with a polyimide hard coat for increased cut-through and abrasion resistance, and silver- or nickel-plated copper conductors.

### Performance:

**Voltage rating:** 600V.

**Temperature rating:** -55 to 200° C.

See page 58 for component wire dimensions.

## Part Numbers:

**M 27 500 - 22 MS 1 N 12**

Component wire AWG — 22  
Component wire type — MS  
MR: MIL-DTL-81381/7  
MS: MIL-DTL-81381/8

Jacket material — 12: FEP/Polyimide Tape  
Shield material — N: Nickel-plated copper  
S: Silver-plated copper  
Number of component wires — 1

## Dimensions and Weight—1 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
10 (37/26)	.138 (3.51)	.147 (3.72)	37.9(56.46)
12 (37/28)	.115 (2.92)	.124 (3.14)	25.7(38.19)
14 (19/27)	.096 (2.44)	.105 (2.66)	17.7(26.40)
16 (19/29)	.083 (2.11)	.092 (2.33)	12.5(18.62)
18 (19/30)	.077 (1.96)	.086 (2.18)	10.6(15.71)
20 (19/32)	.067 (1.70)	.076 (1.92)	8.23(12.25)
22 (19/34)	.059 (1.50)	.068 (1.72)	5.82 (8.65)
24 (19/36)	.052 (1.32)	.061 (1.54)	4.84 (7.20)
26 (19/38)	.049 (1.24)	.058 (1.46)	4.31 (6.41)

## Dimensions and Weight—2 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
10 (37/26)	.260 (6.60)	.269 (6.82)	74.2 (110)
12 (37/28)	.214 (5.44)	.223 (5.66)	50.2 (74.8)
14 (19/27)	.176 (4.47)	.185 (4.69)	34.0 (50.6)
16 (19/29)	.150 (3.81)	.159 (4.03)	23.7 (35.3)
18 (19/30)	.138 (3.51)	.147 (3.72)	19.7 (29.4)
20 (19/32)	.118 (3.00)	.127 (3.22)	14.3 (21.3)
22 (19/34)	.102 (2.59)	.111 (2.81)	10.8 (16.1)
24 (19/36)	.088 (2.24)	.097 (2.45)	7.96 (11.8)
26 (19/38)	.082 (2.08)	.091 (2.30)	6.85 (10.2)

## Dimensions and Weight—3 Conductor Cables\*

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
10 (37/26)	.282 (7.17)	.291 (7.39)	110 (164)
12 (37/28)	.229 (5.81)	.237 (6.03)	71.4 (106)
14 (19/27)	.188 (4.78)	.197 (4.99)	48.0 (71.5)
16 (19/29)	.160 (4.07)	.169 (4.28)	33.0 (49.1)
18 (19/30)	.147 (3.74)	.156 (3.96)	27.3 (40.6)
20 (19/32)	.126 (3.19)	.134 (3.41)	19.5 (29.0)
22 (19/34)	.108 (2.75)	.117 (2.97)	13.9 (20.7)
24 (19/36)	.093 (2.37)	.102 (2.59)	10.7 (15.9)
26 (19/38)	.087 (2.21)	.096 (2.43)	8.41 (12.5)

## Dimensions and Weight—4 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
10 (37/26)	.314 (7.98)	.327 (8.29)	145 (216)
12 (37/28)	.259 (6.58)	.267 (6.79)	95.8 (143)
14 (19/27)	.209 (5.31)	.217 (5.52)	62.2 (92.6)
16 (19/29)	.177 (4.50)	.186 (4.73)	42.3 (63.0)
18 (19/30)	.163 (4.14)	.172 (4.36)	35.0 (52.1)
20 (19/32)	.139 (3.53)	.148 (3.75)	24.7 (36.8)
22 (19/34)	.120 (3.05)	.128 (3.26)	18.1 (27.0)
24 (19/36)	.103 (2.62)	.111 (2.83)	12.8 (19.0)
26 (19/38)	.096 (2.44)	.104 (2.65)	10.5 (15.7)

# M27500 Cables—types MT and MV (M81381/9, /10 components)

**M27500 MT and MV cables** are shielded and jacketed cables with a jacket of FEP/polyimide tape, incorporating MIL-DTL-81381/9 or /10 wires.

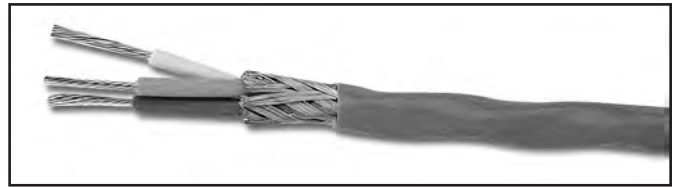
These component wires have a light-weight insulation of two layers of FEP/polyimide/FEP tape with a polyimide hard coat for increased cut-through and abrasion resistance, and silver- or nickel-plated high-strength copper alloy conductors.

## Performance:

**Voltage rating:** 600V.

**Temperature rating:** -55 to 200° C.

See page 59 for component wire dimensions.



## Construction Details

### Component wire conductor:

/9 component wires: Silver-plated high-strength copper alloy;

/10 component wires: Nickel-plated high-strength copper alloy.

### Component wire insulation:

Two layers of FEP/polyimide/FEP tape with modified aromatic polyimide coating.

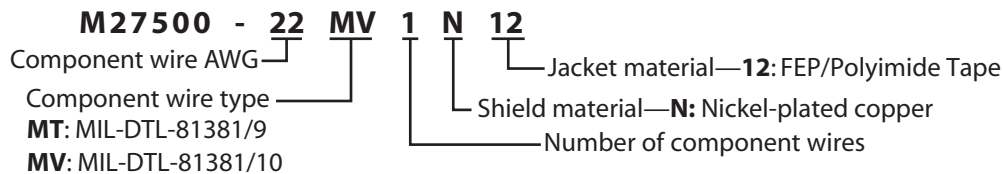
**Shield:** Nickel-plated copper braid, 85% coverage.

**Jacket:** Natural polyimide/FEP tape, wrapped and heat sealed, with polyimide outer surface.

**Colors:** Color coded to M27500 (see page 67).

Certifications also available to NEMA WC27500.

## Part Numbers:



## Dimensions and Weight—1 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
20 (19/32)	.067 (1.70)	.076 (1.92)	8.23 (12.25)
22 (19/34)	.059 (1.50)	.068 (1.72)	5.82 (8.65)
24 (19/36)	.052 (1.32)	.061 (1.54)	4.84 (7.20)
26 (19/38)	.049 (1.24)	.058 (1.46)	4.31 (6.41)

## Dimensions and Weight—2 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
20 (19/32)	.118 (3.00)	.127 (3.22)	14.3 (21.3)
22 (19/34)	.102 (2.59)	.111 (2.81)	10.8 (16.1)
24 (19/36)	.088 (2.24)	.097 (2.45)	7.96 (11.8)
26 (19/38)	.082 (2.08)	.091 (2.30)	6.85 (10.2)

## Dimensions and Weight—3 Conductor Cables\*

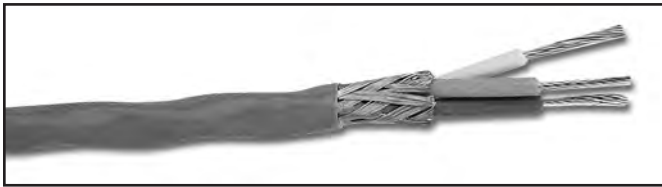
Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
20 (19/32)	.126 (3.19)	.134 (3.41)	19.5 (29.0)
22 (19/34)	.108 (2.75)	.117 (2.97)	13.9 (20.7)
24 (19/36)	.093 (2.37)	.102 (2.59)	10.7 (15.9)
26 (19/38)	.087 (2.21)	.096 (2.43)	8.41 (12.5)

## Dimensions and Weight—4 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
20 (19/32)	.139 (3.53)	.148 (3.75)	24.7 (36.8)
22 (19/34)	.120 (3.05)	.128 (3.26)	18.1 (27.0)
24 (19/36)	.103 (2.62)	.111 (2.83)	12.8 (19.0)
26 (19/38)	.096 (2.44)	.104 (2.65)	10.5 (15.7)

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). All values are nominal. \*Using factors from a circumscribed circle per M27500.

# M27500 Cables—types MW and MY (M81381/11, /12 components)



## Construction Details

### Component wire conductor:

/11 component wires: Silver-plated copper;  
/12 component wires: Nickel-plated copper.

### Component wire insulation:

Polyimide/FEP tape (inner layer);  
FEP/polyimide/FEP tape (second layer);  
Modified aromatic polyimide coating (outer layer).

**Shield:** Nickel-plated copper braid, 85% coverage.

**Jacket:** Natural polyimide/FEP tape, wrapped and heat sealed, with polyimide outer surface.

**Colors:** Color coded to M27500 (see page 67).

Certifications also available to NEMA WC27500.

**M27500 MW and MY cables** are shielded and jacketed cables with a jacket of FEP/polyimide tape, incorporating MIL-DTL-81381/11 or /12 wires.

These component wires have a medium-weight insulation of three layers: polyimide/FEP tape, FEP/polyimide/FEP tape, and an outer coating of modified aromatic polyimide.

The component wires have silver- or nickel-plated copper conductors.

### Performance:

**Voltage rating:** 600V.

**Temperature rating:** -55 to 200° C.

See page 60 for component wire dimensions.

## Part Numbers:

**M27500 - 18 MY 1 N 12**

Component wire AWG — 18  
Component wire type — MY  
MW: MIL-DTL-81381/11  
MY: MIL-DTL-81381/12

Jacket material — 12: FEP/Polyimide Tape  
Shield material — N: Nickel-plated copper  
Number of component wires — 18

## Dimensions and Weight—1 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
10 (37/26)	.141 (3.58)	.150 (3.80)	39.4 (58.7)
12 (37/28)	.119 (3.02)	.128 (3.24)	26.7 (39.8)
14 (19/27)	.100 (2.54)	.109 (2.76)	18.8 (27.9)
16 (19/29)	.087 (2.21)	.096 (2.43)	13.6 (20.3)
18 (19/30)	.081 (2.06)	.090 (2.28)	11.4 (17.0)
20 (19/32)	.071 (1.80)	.080 (2.02)	8.52 (12.7)
22 (19/34)	.063 (1.60)	.072 (1.82)	6.37 (9.47)
24 (19/36)	.058 (1.47)	.067 (1.69)	5.16 (7.67)

## Dimensions and Weight—2 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
10 (37/26)	.266 (6.76)	.275 (6.98)	77.4 (115)
12 (37/28)	.222 (5.64)	.231 (5.86)	52.1 (77.5)
14 (19/27)	.184 (4.67)	.193 (4.89)	36.1 (53.8)
16 (19/29)	.158 (4.01)	.167 (4.23)	25.8 (38.4)
18 (19/30)	.146 (3.71)	.155 (3.93)	21.5 (32.1)
20 (19/32)	.126 (3.20)	.135 (3.42)	15.5 (23.0)
22 (19/34)	.110 (2.79)	.119 (3.01)	11.4 (17.0)
24 (19/36)	.100 (2.54)	.109 (2.76)	9.34 (13.9)

## Dimensions and Weight—3 Conductor Cables\*

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
10 (37/26)	.289 (7.33)	.297 (7.55)	115 (171)
12 (37/28)	.237 (6.03)	.246 (6.25)	74.1 (110)
14 (19/27)	.197 (4.99)	.205 (5.21)	51.5 (76.6)
16 (19/29)	.169 (4.28)	.177 (4.50)	35.2 (52.3)
18 (19/30)	.156 (3.96)	.164 (4.18)	29.7 (44.1)
20 (19/32)	.134 (3.41)	.143 (3.63)	21.0 (31.3)
22 (19/34)	.117 (2.97)	.126 (3.19)	15.5 (23.0)
24 (19/36)	.106 (2.70)	.116 (2.92)	11.8 (17.5)

## Dimensions and Weight—4 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
10 (37/26)	.321 (8.15)	.334 (8.48)	151 (225)
12 (37/28)	.268 (6.80)	.277 (7.03)	99.6 (148)
14 (19/27)	.218 (5.54)	.227 (5.77)	66.1 (98.3)
16 (19/29)	.187 (4.75)	.196 (4.97)	45.2 (67.3)
18 (19/30)	.173 (4.39)	.181 (4.60)	37.8 (56.2)
20 (19/32)	.149 (3.78)	.157 (3.99)	26.7 (39.7)
22 (19/34)	.129 (3.28)	.138 (3.50)	19.4 (28.9)
24 (19/36)	.117 (2.91)	.126 (3.20)	14.7 (21.9)

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). All values are nominal. \*Using factors from a circumscribed circle per M27500.

# M27500 Cables—types NA and NB (M81381/13, /14 components)

**M27500 NA and NB cables** are shielded and jacketed cables with a jacket of FEP/polyimide tape, incorporating MIL-DTL-81381/13 or /14 wires.

These component wires have a medium-weight insulation of two layers of FEP/polyimide/FEP tape with a polyimide hard coat for increased cut-through and abrasion resistance.

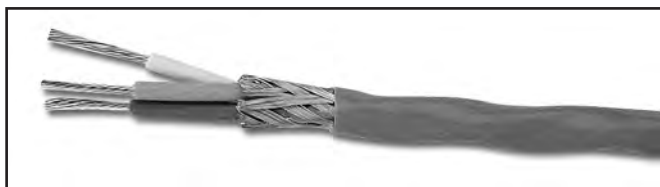
The component wires have silver- or nickel-plated high-strength copper alloy conductors.

**Performance:**

**Voltage rating:** 600V.

**Temperature rating:** -55 to 200° C.

See page 61 for component wire dimensions.



**Construction Details**

**Component wire conductor:**

/13 component wires: Silver-plated high-strength copper alloy;

/14 component wires: Nickel-plated high-strength copper alloy.

**Component wire insulation:**

Two layers of FEP/polyimide/FEP tape with modified aromatic polyimide coating.

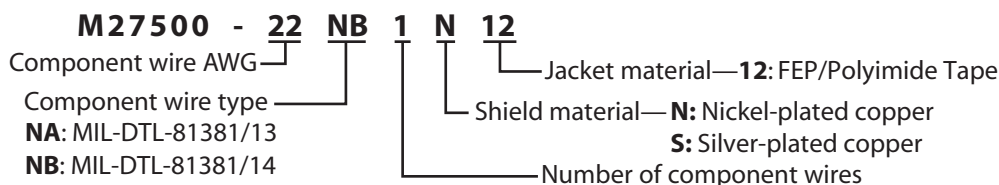
**Shield:** Nickel- or silver-plated copper braid, 85% coverage.

**Jacket:** Natural polyimide/FEP tape, wrapped and heat sealed, with polyimide outer surface.

**Colors:** Color coded to M27500 (see page 67).

Certifications also available to NEMA WC27500.

**Part Numbers:**



**Dimensions and Weight—1 Conductor Cables**

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
20 (19/32)	.071 (1.80)	.080 (2.02)	8.52 (12.7)
22 (19/34)	.063 (1.60)	.072 (1.82)	6.37 (9.47)
24 (19/36)	.058 (1.47)	.067 (1.69)	5.16 (7.67)

**Dimensions and Weight—2 Conductor Cables**

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
20 (19/32)	.126 (3.20)	.135 (3.42)	15.5 (23.0)
22 (19/34)	.110 (2.79)	.119 (3.01)	11.4 (17.0)
24 (19/36)	.100 (2.54)	.109 (2.76)	9.34 (13.9)

**Dimensions and Weight—3 Conductor Cables\***

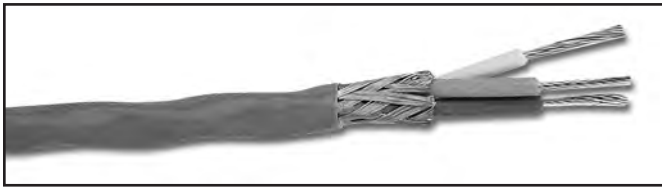
Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
20 (19/32)	.134 (3.41)	.143 (3.63)	21.0 (31.3)
22 (19/34)	.117 (2.97)	.126 (3.19)	15.5 (23.0)
24 (19/36)	.106 (2.70)	.116 (2.92)	11.8 (17.5)

**Dimensions and Weight—4 Conductor Cables**

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
20 (19/32)	.149 (3.78)	.157 (3.99)	26.7 (39.7)
22 (19/34)	.129 (3.28)	.138 (3.50)	19.4 (28.9)
24 (19/36)	.117 (2.91)	.126 (3.20)	14.7 (21.9)

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). All values are nominal. \*Using factors from a circumscribed circle per M27500.

# M27500 Cables—types NE and NF (M81381/17, /18 components)



## Construction Details

### Component wire conductor:

/17 component wires: Silver-plated copper;  
/18 component wires: Nickel-plated copper.

### Component wire insulation:

FEP/polyimide/FEP tape with modified aromatic polyimide coating.

**Shield:** Nickel- or silver-plated copper braid, 85% coverage.

**Jacket:** Natural polyimide/FEP tape, wrapped and heat sealed, with polyimide outer surface.

**Colors:** Color coded to M27500 (see page 67).

Certifications also available to NEMA WC27500.

**M27500 NE and NF cables** are shielded and jacketed cables with a jacket of FEP/polyimide tape, incorporating MIL-DTL-81381/17 or /18 wires.

These component wires have a light-weight insulation of FEP/polyimide/FEP tape with an outer coating of modified aromatic polyimide.

The component wires have silver- or nickel-plated copper conductors.

### Performance:

**Voltage rating:** 600V.

**Temperature rating:** -55 to 200° C.

See page 62 for component wire dimensions.

## Part Numbers:

**M27500 - 18 NF 1 N 12**

Component wire AWG — 18  
Component wire type — NF: MIL-DTL-81381/17  
NE: MIL-DTL-81381/18  
Shield material — N: Nickel-plated copper  
S: Silver-plated copper  
Jacket material — 12: FEP/Polyimide Tape  
Number of component wires — 1

## Dimensions and Weight—1 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
12 (37/28)	.112 (2.84)	.121 (3.06)	25.1 (37.3)
14 (19/27)	.093 (2.36)	.102 (2.58)	17.4 (26.0)
16 (19/29)	.080 (2.03)	.089 (2.25)	12.1 (18.0)
18 (19/30)	.073 (1.85)	.082 (2.07)	10.4 (15.5)
20 (19/32)	.064 (1.63)	.073 (1.85)	7.53 (11.2)
22 (19/34)	.056 (1.42)	.065 (1.64)	5.71 (8.49)
24 (19/36)	.050 (1.27)	.059 (1.49)	4.79 (7.12)
26 (19/38)	.045 (1.14)	.054 (1.36)	4.14 (6.16)

## Dimensions and Weight—2 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
12 (37/28)	.208 (5.28)	.217 (5.50)	48.6 (72.4)
14 (19/27)	.170 (4.32)	.179 (4.54)	33.7 (50.2)
16 (19/29)	.144 (3.66)	.153 (3.88)	22.9 (34.1)
18 (19/30)	.130 (3.30)	.139 (3.52)	19.4 (28.9)
20 (19/32)	.112 (2.84)	.121 (3.06)	13.8 (20.6)
22 (19/34)	.096 (2.44)	.105 (2.66)	9.93 (14.8)
24 (19/36)	.084 (2.13)	.093 (2.35)	7.84 (11.7)
26 (19/38)	.074 (1.88)	.083 (2.10)	5.90 (8.78)

## Dimensions and Weight—3 Conductor Cables\*

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
12 (37/28)	.222 (5.65)	.231 (5.87)	69.5 (103)
14 (19/27)	.182 (4.61)	.190 (4.83)	47.3 (70.4)
16 (19/29)	.154 (3.90)	.162 (4.12)	31.8 (47.4)
18 (19/30)	.139 (3.52)	.147 (3.74)	26.9 (40.0)
20 (19/32)	.119 (3.03)	.128 (3.25)	19.0 (28.2)
22 (19/34)	.102 (2.59)	.111 (2.81)	13.4 (19.9)
24 (19/36)	.089 (2.26)	.098 (2.48)	9.96 (14.8)
26 (19/38)	.078 (1.99)	.087 (2.21)	7.80 (11.6)

## Dimensions and Weight—4 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
12 (37/28)	.251 (6.38)	.260 (6.60)	93.7 (139)
14 (19/27)	.202 (5.12)	.210 (5.34)	61.5 (91.5)
16 (19/29)	.170 (4.32)	.179 (4.54)	41.0 (61.0)
18 (19/30)	.153 (3.90)	.162 (4.12)	34.5 (51.3)
20 (19/32)	.132 (3.34)	.140 (3.56)	24.1 (35.9)
22 (19/34)	.112 (2.85)	.121 (3.07)	16.9 (25.2)
24 (19/36)	.098 (2.49)	.107 (2.71)	12.5 (18.7)
26 (19/38)	.086 (2.18)	.095 (2.40)	9.92 (14.8)

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). All values are nominal. \*Using factors from a circumscribed circle per M27500.

# M27500 Cables—types NG and NH (M81381/19, /20 components)

**M27500 NG and NH cables** are shielded and jacketed cables with a jacket of FEP/polyimide tape, incorporating MIL-DTL-81381/19 or /20 wires.

These component wires have a light-weight insulation of FEP/polyimide/FEP tape with an outer coating of modified aromatic polyimide.

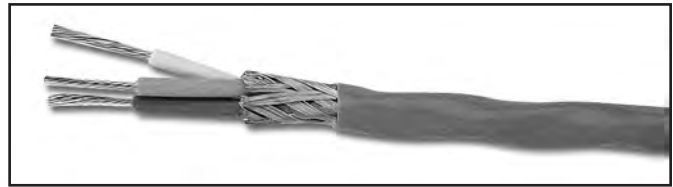
The component wires have silver- or nickel-plated high-strength copper alloy conductors.

**Performance:**

**Voltage rating:** 600V.

**Temperature rating:** -55 to 200° C.

See page 63 for component wire dimensions.



**Construction Details**

**Component wire conductor:**

/19 component wires: Silver-plated high-strength copper alloy;

/20 component wires: Nickel-plated high-strength copper alloy.

**Component wire insulation:**

FEP/polyimide/FEP tape with modified aromatic polyimide coating.

**Shield:** Nickel- or silver-plated copper braid, 85% coverage.

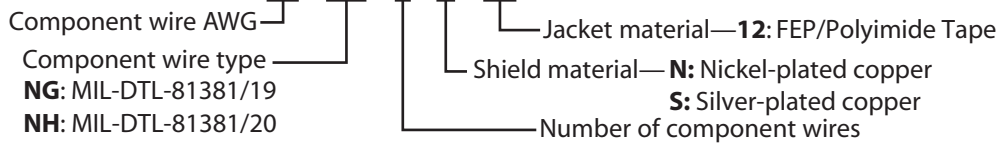
**Jacket:** Natural polyimide/FEP tape, wrapped and heat sealed, with polyimide outer surface.

**Colors:** Color coded to M27500 (see page 67).

Certifications also available to NEMA WC27500.

**Part Numbers:**

**M27500 - 22 NH 1 N 12**



**Dimensions and Weight—1 Conductor Cables**

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
20 (19/32)	.064 (1.63)	.073 (1.85)	7.53 (11.2)
22 (19/34)	.056 (1.42)	.065 (1.64)	5.71 (8.49)
24 (19/36)	.050 (1.27)	.059 (1.49)	4.79 (7.12)
26 (19/38)	.045 (1.14)	.054 (1.36)	4.14 (6.16)

**Dimensions and Weight—2 Conductor Cables**

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
20 (19/32)	.112 (2.84)	.121 (3.06)	13.8 (20.6)
22 (19/34)	.096 (2.44)	.105 (2.66)	9.93 (14.8)
24 (19/36)	.084 (2.13)	.093 (2.35)	7.84 (11.7)
26 (19/38)	.074 (1.88)	.083 (2.10)	5.90 (8.78)

**Dimensions and Weight—3 Conductor Cables\***

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
20 (19/32)	.119 (3.03)	.128 (3.25)	19.0 (28.2)
22 (19/34)	.102 (2.59)	.111 (2.81)	13.4 (19.9)
24 (19/36)	.089 (2.26)	.098 (2.48)	9.96 (14.8)
26 (19/38)	.078 (1.99)	.087 (2.21)	7.80 (11.6)

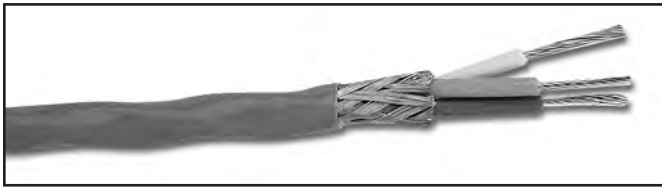
**Dimensions and Weight—4 Conductor Cables**

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
20 (19/32)	.132 (3.34)	.140 (3.56)	24.1 (35.9)
22 (19/34)	.112 (2.85)	.121 (3.07)	16.9 (25.2)
24 (19/36)	.098 (2.49)	.107 (2.71)	12.5 (18.7)
26 (19/38)	.086 (2.18)	.095 (2.40)	9.92 (14.8)

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). All values are nominal. \*Using factors from a circumscribed circle per M27500.



# M27500 Cables—type NK (M81381/21 components)



## Construction Details

**Component wire conductor:** Tin-plated copper.

**Component wire insulation:**  
Two layers of FEP/polyimide/FEP tape with modified aromatic polyimide coating.

**Shield:** Tin-plated copper braid, 85% coverage.

**Jacket:** Natural polyimide/FEP tape, wrapped and heat sealed, with polyimide outer surface.

**Colors:** Color coded to M27500 (see page 67).

Certifications also available to NEMA WC27500.

**M27500 NK cables** are shielded and jacketed cables with a jacket of FEP/polyimide tape, incorporating MIL-DTL-81381/21 wires.

These component wires have an insulation of two layers of FEP/polyimide/FEP tape with a polyimide hard coat for increased cut-through and abrasion resistance.

The component wires have tin-plated copper conductors.

## Performance:

**Voltage rating:** 600V.

**Temperature rating:** -55 to 150° C.

See page 64 for component wire dimensions.

## Part Numbers:

**M27500 - 18 NK 1 T 12**

Component wire AWG—**18**  
Component wire type—**NK**: MIL-DTL-81381/21  
Shield material—**T**: Tin-plated copper  
Jacket material—**12**: FEP/Polyimide Tape  
Number of component wires—**1**

## Dimensions and Weight—1 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
10 (37/26)	.138 (3.51)	.147 (3.72)	37.9 (56.46)
12 (37/28)	.115 (2.92)	.124 (3.14)	25.7 (38.19)
14 (19/27)	.096 (2.44)	.105 (2.66)	17.7 (26.40)
16 (19/29)	.083 (2.11)	.092 (2.33)	12.5 (18.62)
18 (19/30)	.077 (1.96)	.086 (2.18)	10.6 (15.71)
20 (19/32)	.067 (1.70)	.076 (1.92)	8.23 (12.25)
22 (19/34)	.059 (1.50)	.068 (1.72)	5.82 (8.65)
24 (19/36)	.052 (1.32)	.061 (1.54)	4.84 (7.20)
26 (19/38)	.049 (1.24)	.058 (1.46)	4.31 (6.41)

## Dimensions and Weight—2 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
10 (37/26)	.260 (6.60)	.269 (6.82)	74.2 (110)
12 (37/28)	.214 (5.44)	.223 (5.66)	50.2 (74.8)
14 (19/27)	.176 (4.47)	.185 (4.69)	34.0 (50.6)
16 (19/29)	.150 (3.81)	.159 (4.03)	23.7 (35.3)
18 (19/30)	.138 (3.51)	.147 (3.72)	19.7 (29.4)
20 (19/32)	.118 (3.00)	.127 (3.22)	14.3 (21.3)
22 (19/34)	.102 (2.59)	.111 (2.81)	10.8 (16.1)
24 (19/36)	.088 (2.24)	.097 (2.45)	7.96 (11.8)
26 (19/38)	.082 (2.08)	.091 (2.30)	6.85 (10.2)

## Dimensions and Weight—3 Conductor Cables\*

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
10 (37/26)	.282 (7.17)	.291 (7.39)	110 (164)
12 (37/28)	.229 (5.81)	.237 (6.03)	71.4 (106)
14 (19/27)	.188 (4.78)	.197 (4.99)	48.0 (71.5)
16 (19/29)	.160 (4.07)	.169 (4.28)	33.0 (49.1)
18 (19/30)	.147 (3.74)	.156 (3.96)	27.3 (40.6)
20 (19/32)	.126 (3.19)	.134 (3.41)	19.5 (29.0)
22 (19/34)	.108 (2.75)	.117 (2.97)	13.9 (20.7)
24 (19/36)	.093 (2.37)	.102 (2.59)	10.7 (15.9)
26 (19/38)	.087 (2.21)	.096 (2.43)	8.41 (12.5)

## Dimensions and Weight—4 Conductor Cables

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
10 (37/26)	.314 (7.98)	.327 (8.29)	145 (216)
12 (37/28)	.259 (6.58)	.267 (6.79)	95.8 (143)
14 (19/27)	.209 (5.31)	.217 (5.52)	62.2 (92.6)
16 (19/29)	.177 (4.50)	.186 (4.73)	42.3 (63.0)
18 (19/30)	.163 (4.14)	.172 (4.36)	35.0 (52.1)
20 (19/32)	.139 (3.53)	.148 (3.75)	24.7 (36.8)
22 (19/34)	.120 (3.05)	.128 (3.26)	18.1 (27.0)
24 (19/36)	.103 (2.62)	.111 (2.83)	12.8 (19.0)
26 (19/38)	.096 (2.44)	.104 (2.65)	10.5 (15.7)

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). All values are nominal. \*Using factors from a circumscribed circle per M27500.

# M27500 Cables—type NL (M81381/22 components)

**M27500 NL cables** are shielded and jacketed cables with a jacket of FEP/polyimide tape, incorporating MIL-DTL-81381/22 wires.

These component wires have an insulation of two layers of FEP/polyimide/FEP tape with a polyimide hard coat for increased cut-through and abrasion resistance.

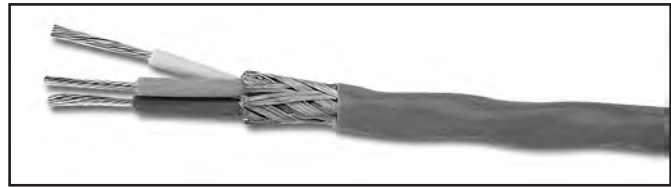
The component wires have tin-plated copper conductors.

**Performance:**

**Voltage rating:** 600V.

**Temperature rating:** -55 to 150° C.

See page 64 for component wire dimensions.



**Construction Details**

**Component wire conductor:** Tin-plated copper.

**Component wire insulation:**

Two layers of FEP/polyimide/FEP tape with modified aromatic polyimide coating.

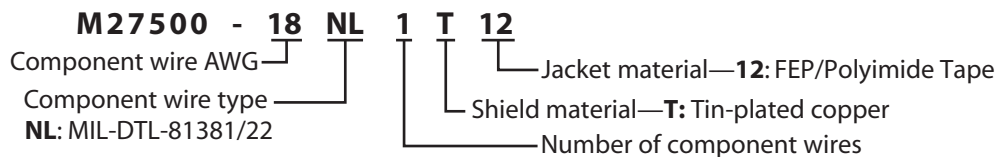
**Shield:** Tin-plated copper braid, 85% coverage.

**Jacket:** Natural polyimide/FEP tape, wrapped and heat sealed, with polyimide outer surface.

**Colors:** Color coded to M27500 (see page 67).

Certifications also available to NEMA WC27500.

**Part Numbers:**



**Dimensions and Weight—1 Conductor Cables**

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
10 (37/26)	.141 (3.58)	.150 (3.80)	39.4 (58.7)
12 (37/28)	.119 (3.02)	.128 (3.24)	26.7 (39.8)
14 (19/27)	.100 (2.54)	.109 (2.76)	18.8 (27.9)
16 (19/29)	.087 (2.21)	.096 (2.43)	13.6 (20.3)
18 (19/30)	.081 (2.06)	.090 (2.28)	11.4 (17.0)
20 (19/32)	.071 (1.80)	.080 (2.02)	8.52 (12.7)
22 (19/34)	.063 (1.60)	.072 (1.82)	6.37 (9.47)
24 (19/36)	.058 (1.47)	.067 (1.69)	5.16 (7.67)

**Dimensions and Weight—2 Conductor Cables**

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
10 (37/26)	.266 (6.76)	.275 (6.98)	77.4 (115)
12 (37/28)	.222 (5.64)	.231 (5.86)	52.1 (77.5)
14 (19/27)	.184 (4.67)	.193 (4.89)	36.1 (53.8)
16 (19/29)	.158 (4.01)	.167 (4.23)	25.8 (38.4)
18 (19/30)	.146 (3.71)	.155 (3.93)	21.5 (32.1)
20 (19/32)	.126 (3.20)	.135 (3.42)	15.5 (23.0)
22 (19/34)	.110 (2.79)	.119 (3.01)	11.4 (17.0)
24 (19/36)	.100 (2.54)	.109 (2.76)	9.34 (13.9)

**Dimensions and Weight—3 Conductor Cables\***

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
10 (37/26)	.289 (7.33)	.297 (7.55)	115 (171)
12 (37/28)	.237 (6.03)	.246 (6.25)	74.1 (110)
14 (19/27)	.197 (4.99)	.205 (5.21)	51.5 (76.6)
16 (19/29)	.169 (4.28)	.177 (4.50)	35.2 (52.3)
18 (19/30)	.156 (3.96)	.164 (4.18)	29.7 (44.1)
20 (19/32)	.134 (3.41)	.143 (3.63)	21.0 (31.3)
22 (19/34)	.117 (2.97)	.126 (3.19)	15.5 (23.0)
24 (19/36)	.106 (2.70)	.116 (2.92)	11.8 (17.5)

**Dimensions and Weight—4 Conductor Cables**

Component Wire AWG (Stranding)	Shield Diameter	Jacket Diameter	Weight
10 (37/26)	.321 (8.15)	.334 (8.48)	151 (225)
12 (37/28)	.268 (6.80)	.277 (7.03)	99.6 (148)
14 (19/27)	.218 (5.54)	.227 (5.77)	66.1 (98.3)
16 (19/29)	.187 (4.75)	.196 (4.97)	45.2 (67.3)
18 (19/30)	.173 (4.39)	.181 (4.60)	37.8 (56.2)
20 (19/32)	.149 (3.78)	.157 (3.99)	26.7 (39.7)
22 (19/34)	.129 (3.28)	.138 (3.50)	19.4 (28.9)
24 (19/36)	.117 (2.91)	.126 (3.20)	14.7 (21.9)

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). All values are nominal. \*Using factors from a circumscribed circle per M27500.

# M27500 Cables—Seamless Wrap PTFE tape options

Many Thermax M27500 cables can be ordered with component wires featuring **Seamless Wrap** PTFE tape insulation, as noted on the following product pages.

Cables with type 24 (single) and 74 (double) jackets and M22759/80 through /92 component wires can be ordered with **Seamless Wrap** component wire insulation and jacket outer layer (see chart below for part numbers).

Thermax **Seamless Wrap** PTFE wire insulation and cable jacket offers all the advantages of a tape wrap with the smooth appearance and installation characteristics of an extrusion.

**Seamless Wrap** features an outer surface that:

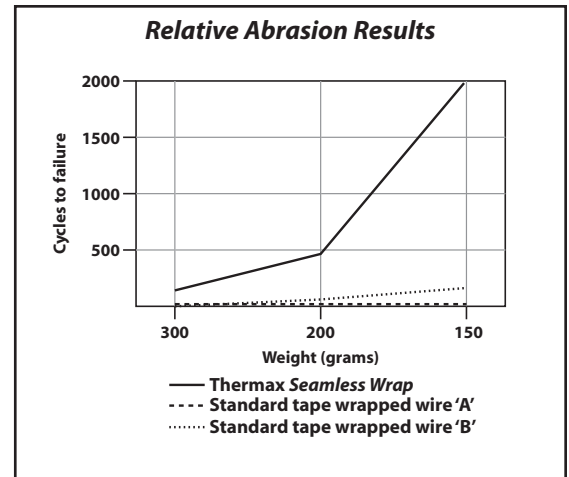
- Looks and feels like an extruded jacket;
- Reduces the possibility of damage during installation or re-routing (no seams to snag);
- Yields a more consistent final O.D. for cleaner stripping, marking, and stripping;
- Accepts clear, permanent laser marking.

Because of its uniform cross section, **Seamless Wrap** is superior to conventional wrapped tape in:

- Consistent wall thickness;
- Increased dielectric strength;
- Enhanced wet and dry arc propagation resistance.

By eliminating the mechanical “weak points” of seams in conventional wrapped tapes, **Seamless Wrap**:

- Significantly improves abrasion resistance, particularly wire-to-wire;
- Eliminates delaminating of sintered tape layers;
- Has enhanced crack resistance for use in SWAMP and fire zone applications.



**Seamless Wrap insulation cuts clean and smooth with no unraveling.**



**Clear, crisp laser marking enhanced by smooth outer surface.**

## M27500 Cables With Seamless Wrap Jacket and Component Wire Insulation

