

NV & NVP CABLES

Suitable for Rough Usage - 20 AWG

- AWM Style 20233
- 80°C, 300 Volt, VW-1
- CSA AWM II A/B, 80°C, 300 V, FT-1

National Wire & Cable Corporation manufactures a family of highly flexible miniature **rough-usage** low-voltage instrument control cable. These are available as cabled pairs or singles, with optional overall shield of foil with drain wire.

Conductors are stranded tinned copper with .011" wall of super-tough extruded polypropylene primary insulation, having excellent electrical properties. Wires are color coded using ten std. colors + stripes meeting UL style 10493.

Conductors are planetary cabled and helically laid for optimum flexibility, with a barrier tape under braids, if used.

Shielded cables have 100% coverage aluminum-foil shield in contact with a stranded drain wire for easy termination. Optional tinned copper braid of >90% coverage per MIL-C-7078, with braid angles below 40° for easy pushback is available on special order.

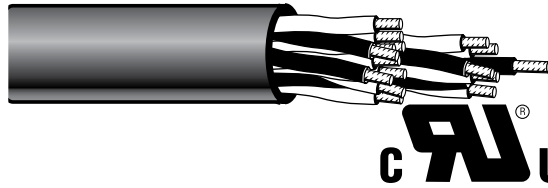
Outer jacket is highly flexible poly-ether-urethane thermoplastic, very resistant to oils, fuels, flame, and UV. Polyurethane is noted for outstanding resistance to scuffing and tearing.

Standard cable has super-durable black polyurethane jacket, or may be supplied with blue outer jacket for use in "Intrinsically Safe" applications. (Ref. National Electric Code, Chapter 5, Section 504.)

Finished cable meets the UL Vertical Flame Test type VW-1 and CSA FT-1 flame test.

Finished cable is UL Recognized and meets all requirements of Appliance Wiring Material Style 20233 which bears the agency intended-use of "External connection of electronic equipment."

Widely used for molded-connector assemblies due to uniform controlled diameter. All cables bear printed marks for UL rated voltage (300 V.), temperature (+80°C), and flame resistance (UL VW-1). Available in other conductor AWG sizes and stranding. Please consult factory.



Property	Technical Data for 20 AWG
Agency Cable Style	ULAWM Style 20233
Agency voltage rating	300 Volts
Agency temperature rating	+80°C.
Agency Flame Rating	UL VW-1 and also Canadian CSA FT-1
Factory HiPot test volts	1500 VAC each conductor to all others & shield, connected in common.
Factory spark test (dry) individual wires	100 % of all wire passes 3400 VAC "spark test" before processing.
Cold Bending	Passes cold bend (180° over 2x mandrel) at -20°C. Storage OK at -40°C.
Conductor Resistance, single, not pair	9.5 ohms per 1000 feet; (3.1 ohms per 100 meter) (20 awg)
Conductor Resistance, single, in a pair	10 ohms per 1000 feet; (3.3 ohms per 100 meter) (20 awg)
Wire Insulation Resistance (IR)	3,000 megohms per 100 meters, from one conductor to all else in common + shield, nom.
Jacket Insulation Resistance (Wet IR)	100 megohm per 100 meters from conductor group + shield to water bath electrode, nom.
Jacket Capacitance (Fully immersed)	95 nFd per 100 meters from wires & shield, grouped, to bath electrode.
Capacitance, one wire to group + shield	17 nFd per 100 meters @ 1000 Hz, nominal (20 awg)
Pair Capacitance wire-wire	9.7 nFd per 100 meters @ 1000 Hz, nominal (20 awg)
Pair Inductance, 2-wire Loop	.064 milli-Henry per 100 meters @ 1000 Hz, nominal. (20 awg)
Pair Impedance, wire-wire	90 ohm diff. impedance, for pairs, nominal (20 awg)
Single conductor Inductance	3.33 milli-Henry per 100 m, end-to-end, @ 1000 Hz. nominal. (20 awg)

NV FAMILY OF CABLED SINGLE WIRES

UNSHIELDED CABLED SINGLE WIRES					20 AWG OVERALL FOIL-SHIELDED OVER CABLED SINGLE WIRES				
Part No.	No. of Wires	Wire AWG & Strands	Diameter Inch mm	Weight Lb/M kg/km	Part No.	No. of Wires	Wire AWG & Strands	Diameter Inch mm	Weight Lb/M kg/km
NV220J	2	20(19)	.184 4.7	16 24	NV220FSJ	2	20(19)	.186 4.7	20 30
NV320J	3	20(19)	.193 4.9	21 31	NV320FSJ	3	20(19)	.195 5.0	25 37
NV420J	4	20(19)	.207 5.3	26 39	NV420FSJ	4	20(19)	.209 5.3	30 45
NV520J	5	20(19)	.225 5.7	31 47	NV520FSJ	5	20(19)	.227 5.8	35 52
NV620J	6	20(19)	.242 6.1	37 55	NV620FSJ	6	20(19)	.244 6.2	40 60
NV920J	9	20(19)	.300 7.6	53 79	NV920FSJ	9	20(19)	.302 7.7	57 84
NV1220J	12	20(19)	.309 7.9	67 99	NV1220FSJ	12	20(19)	.311 7.9	71 105



NVP FAMILY OF CABLED TWISTED PAIRS

UNSHIELDED CABLED PAIRS					20 AWG OVERALL FOIL-SHIELDED OVER CABLED PAIRS				
Part No.	No. of Pairs	Wire AWG & Strands	Diameter Inch mm	Weight Lb/M kg/km	Part No.	No. of Pairs	Wire AWG & Strands	Diameter Inch mm	Weight Lb/M kg/km
NVP220J	2	20(19)	.261 6.7	20 30	NVP220FSJ	2	20(19)	.263 6.8	24 36
NVP320J	3	20(19)	.277 7.1	26 38	NVP320FSJ	3	20(19)	.279 7.2	29 44
NVP420J	4	20(19)	.301 7.9	31 47	NVP420FSJ	4	20(19)	.303 8.0	35 53
NVP520J	5	20(19)	.330 8.8	37 56	NVP520FSJ	5	20(19)	.332 8.8	41 62
NVP620J	6	20(19)	.360 9.7	43 65	NVP620FSJ	6	20(19)	.362 9.7	47 71
NVP920J	9	20(19)	.458 11.2	62 93	NVP920FSJ	9	20(19)	.460 11.2	66 99
NVP1220J	12	20(19)	.474 12.1	77 115	NVP1220FSJ	12	20(19)	.476 12.2	81 121



RoHS COMPLIANT PRODUCTS:

all RoHS products have the letter "R" written into the second position of the Part No.

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