



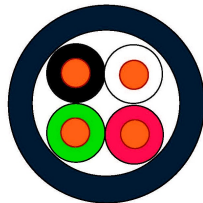
PHILATRON  
WIRE AND CABLE

Introducing.....

# Bronco125-SDHA™

## Flexible Power Cables Small Diameter High Amps (SDHA)

From This



**6/4 SO Cable**  
**600 Volts**  
**45 Amps**

To This



**10/4 SDHA Cable**  
**2,000 Volts**  
**49 Amps**

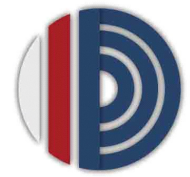
### UL Listed / NEC & MSHA Certified

- Better Temperature Range +125C to -65C versus SO & SEO Cable +90C to -40C
- Better Resistance to Ozone, Oil, and Sunlight than SO & SEO Cable
- Better Handling - Lighter Weight & Smaller Diameter than SO & SEO Cable
- Better Amps (more) than SO & SEO Cables
- Better Voltage (more) than SO & SEO Cables
- Better Price (less)
- Better Quality - 100% Made in the USA versus Offshore Cable

In today's world of global activities, applications of cables in any climate in the world is critical to the integrity of your electrical systems. If the cable fails your system fails. The cables you install to power your systems must be capable of withstanding environmental abuses of abrasion, heat, cold petroleum chemicals, and harsh handling.

Bronco125™ cables are designed to meet the challenges of your system anywhere in the world. Bronco125™ cables gives you excellent flexibility and superior operating temperature ranges from +125°C to -65°C.

Bronco125™ value-to-cost ratio is very high. Bronco125™ cables are intended for users who requires maximum dependability with minimum replacement and down-time expenses.



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# Bronco-125 SDHA™

## Small Diameter High Amps (SDHA)

### Conversion Table SO/SEO to SDHA

TYPE	SIZE	NEC AMPS	O.D. INCHES	TO	BRONCO	SIZE	NEC AMPS	O.D. INCHES
SO/SEO	8/2	40	.814	TO	SDHA	12/2	42	.577
SO/SEO	8/3	40	.855	TO	SDHA	12/3	42	.610
SO/SEO	8/4	35	.980	TO	SDHA	12/4	35	.665
SO/SEO	8/5	28	1.075	TO	SDHA	12/5	28	.729
SO/SEO	6/2	55	.926	TO	SDHA	10/2	59	.622
SO/SEO	6/3	55	.980	TO	SDHA	10/3	59	.659
SO/SEO	6/4	45	1.08	TO	SDHA	10/4	49	.720
SO/SEO	6/5	36	1.20	TO	SDHA	10/5	39.2	.791
SO/SEO	4/2	70	1.06	TO	SDHA	8/2	74	.794
SO/SEO	4/3	70	1.14	TO	SDHA	8/3	74	.903
SO/SEO	4/4	60	1.26	TO	SDHA	8/4	65	.977
SO/SEO	4/5	48	1.365	TO	SDHA	8/5	52	1.03
SO/SEO	2/2	95	1.20	TO	SDHA	6/2	99	.878
SO/SEO	2/3	95	1.33	TO	SDHA	6/3	99	.929
SO/SEO	2/4	80	1.46	TO	SDHA	6/4	87	1.08
SO/SEO	2/5	64	1.58	TO	SDHA	6/5	69.6	1.18

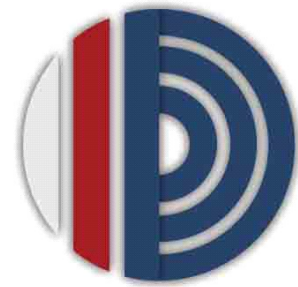
Ampacity based on Ambient Temperature of 86°F (30C°).

# BRONCO-125™

**SDHA** *Small-Diameter-High-Amps*

**2000 Volts - UL / CSA**

## Portable Power Cable



**PHILATRON**

WIRE AND CABLE

### APPLICATION:

For extreme environments and working conditions where maximum resistance to extreme temperatures, chemicals, oil, fuel, abrasion, and flex fatigue is needed. Designed for powering heavy duty field equipment used in mining, cranes, construction, drilling rigs, ships, emergency hospital black outs, movie/stage lighting, submersible pump, undersea and military field operations. Made in the USA to high quality standards.

- Thermoplastic Vulcanizate (TPV) Advanced Synthetic Rubber \*
- Extreme Desert to Arctic Temp Ranges: +125C° to -65C°
- Extremely Reliable and Not Effected by Direct Sunlight & Ozone
- Extra Flexibility for Safer Handling
- Chemicals, Oil, Fuel, Salt Water, Abrasion, & Crush Resistant
- MSHA Approved - Philatron's Certification Number: 7K-281151
- Lead and Asbestos Free for Safer Environment
- Extra Flexible Stranded Bare Annealed Copper
- UL Listed Type PPE 2000 Volts 105C°
- UL, CSA, MSHA, & OSHA - for indoors or outdoors use.

\* Read Bronco-125™ Test Report.

Catalog Number	AWG Size	Number of Conductors	Bare Cu Stranding	NEC *Ampacity	Nom. O.D. (Inches)	Approx. Lbs. M/ft
SDHA122B	12	2	65 X 30	42	.577	197
SDHA123B	12	3	65 x 30	42	.610	249
SDHA124B	12	4	65 x 30	35	.665	307
SDHA125B	12	5	65 X 30	28	.729	365
SDHA102B	10	2	104 x 30	59	.622	240
SDHA103B	10	3	104 x 30	59	.659	309
SDHA104B	10	4	104 X 30	49	.720	384
SDHA105B	10	5	104 x 30	39.2	.791	460
SDGA82B	8	2	133 x 29	74	.794	391
SDHA83B	8	3	133 x 29	74	.791	571
SDHA84B	8	4	133 x 29	65	.977	690
SDHA85B	8	5	133 x 29	52	1.03	790
SDHA62B	6	2	259 x 30	99	.878	490
SDHA63B	6	3	259 x 30	99	.929	638
SDHA64B	6	4	259 X30	87	1.08	875
SDHA65B	6	5	259 x 30	69.6	1.18	875

\*Ampacity ratings are based on ambient temperature at 87 degrees F (30 degrees C).

### COLOR CHART

# CONDUCTORS	COLOR
2	Black, White
3	Black, White, Green
4	Black, White, Red, Green
5	Black, White, Red, Orange, Green

# TO BRONCO 125™ / FROM BRONCO 66

**BRONCO 125™**



**Certified +125°C to -65°C**

The BRONCO 66 cable line was originally developed in the 1940's, and the BRONCO 66 trade name came to be synonymous with exceptional quality.

PHILATRON is a direct descent of the individuals who originally developed BRONCO 66 cables. With over 100 years of expertise in flexible power cables PHILATRON has embraced the concept of advancing *state-of-the-art* in wire, cable and a whole series of innovative new products meeting current and projected market demands in a wide range of industries.

As the technology of wire and cable has been refined over the years, PHILATRON is proud to introduce BRONCO 125™ in a whole new series of cables superior to BRONCO 66 cables.

In today's world of global activities, applications of cables in any climate of the world is critical to the integrity of your electrical system. If the cable fails your system fails. The cables you install to power your systems must be capable of withstanding environmental abuses of abrasion, heat, cold, petroleum, chemicals, and harsh handling.

BRONCO 125™ cables are designed to meet the challenges of your system anywhere in the world. These cables are extraordinarily tough with superior conductor's insulation and outer protecting jacket which exhibits the best physical properties in the industry.

BRONCO 125™ Mining Cables and Portable Power Cables are made of PHILATRON's exclusive proprietary thermoplastic vulcanizate (TPV) advanced synthetic rubber, that gives maximum protection from oil and other petroleum products, corrosive chemicals, ozone, flame, ultraviolet rays, abrasion, cutting, and crushing.

BRONCO 125™ cables gives you excellent flexibility and superior operating temperature ranges from +125°C to -65°C.

BRONCO 125™ value-to-cost ratio is very high. BRONCO 125™ cables are intended for users who requires maximum dependability with minimum replacement and down-time expenses.

BRONCO 125™ cables are engineered and manufactured to meet the applicable specifications of ASTM (American Society for Testing Materials), CSA (Canadian Standard Association), ICEA (Insulated Cable Engineers Association), MIL SPECS (US Military), MSHA (Mine Safety and Health Administration), NEC (National Electric Code), NEMA (National Electrical Manufacturers Association), OSHA (Occupational Safety and Health Administration), and UL (Underwriters Laboratories).

BRONCO 125™ cables are now available in the following constructions:

<b>A</b>	<b>E</b>	Medical Cable	Stage Lighting Cable
Aerial Cables	Elevator Cables	Microphone Cable	Submersible Pump Cable
Aircraft Assembly Plants	Extension Cords	Mil Spec 3432	<b>T</b>
Portable Power Cables	Entertainment Cable	Mining Cable	Trailer Cable
Aircraft Generator Cables	<b>F</b>	Motor Lead Wire	<b>W</b>
Aircraft Ground Support	Festoon Cable	Movie Industry Cable	W Cable
Equipment	Flexible Cord	Multi-Conductors	Welding Cable
Appliance Machine Wire	Flexible Power Cable	Music Instrument	
Arc Welding Cable	<b>G</b>	<b>N</b>	
Arctic Special Purpose	G, & G-GC Cable	Navy Cable	
Automotive Primary Wire	Ground Wire	<b>O</b>	
<b>B</b>	<b>H</b>	Oil Industry Cable	
Battery Cable	Hospital Cable	Overhead Cable	
Boat Cable	<b>I</b>	<b>P</b>	
Booster Cables	Industrial Control Cable	Parallel Power Cable	
<b>C</b>	Instrumentation Cable	PPE Cable	
Camera Cable	<b>L</b>	Portable Power Cable	
Coiled Cords & Cables	Lamp Cord	<b>R</b>	
Control Cable	Laser Control Cable	Rail Road Cable	
Crane Cable	Lighting Cable (Stage)	Robotic Control Cable	
<b>D</b>	Locomotive Cable	<b>S</b>	
Diesel Locomotive Cable	<b>M</b>	SEOWA, SJEOWA	
Direct Burial Cable	Marine Cable	SEVTO	
Drop Cable			

# BRONCO-125™

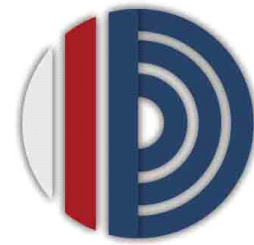
+125° C TO -65° C

Thermoplastic Vulcanizate (TPV) Advanced Synthetic Rubber

## Test Report

BRONCO-125™ Provides Superior:

- Oil Resistance
- Chemical Resistance
- High/Low Temperature
- Abrasion Resistance
- Heat Aging
- Mechanical Strength
- Ozone Resistance
- Lighter Weight



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### ● LOWER TEMPERATURE FLEXIBILITY

BRONCO-125™ rubber flexible cord jackets resist cracking to lower temperatures than either *thermoset* Neoprene or *thermoset* rubber. The following are results of bend tests:

	BRONCO-125™		RUBBER NEOPRENE	
	Type SEO	Type S	Type S	Type SO
Cold Bend @ -35°C	Pass	Pass	Pass	Pass
Cold Bend @ -50°C	Pass	Cracked	Cracked	Cracked
Cold Bend @ -65°C	Pass	Cracked	Cracked	Cracked

PHILAFIN™ cables & cords are UL rated at -50°C to +105C°.

### ● GREATER OZONE RESISTANCE

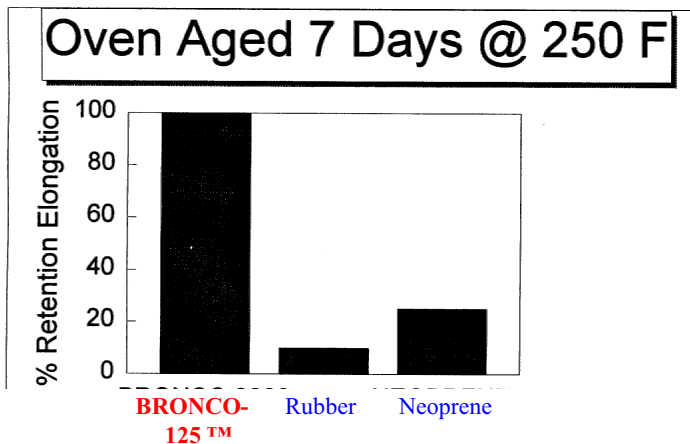
Ozone as generated around most electrical equipment can cause cracking in most conventional rubbers. BRONCO-125™ rubber has excellent resistance to cracking caused by ozone. Below are results of bent loop ozone aging tests of flexible cord jackets.

	BRONCO-125™		RUBBER NEOPRENE	
	Type SEO	Type S	Type S	Type SO
Hours to Cracking	1,000	24	300	

NOTE: OZONE EXPOSURE - 100pphm/100°F

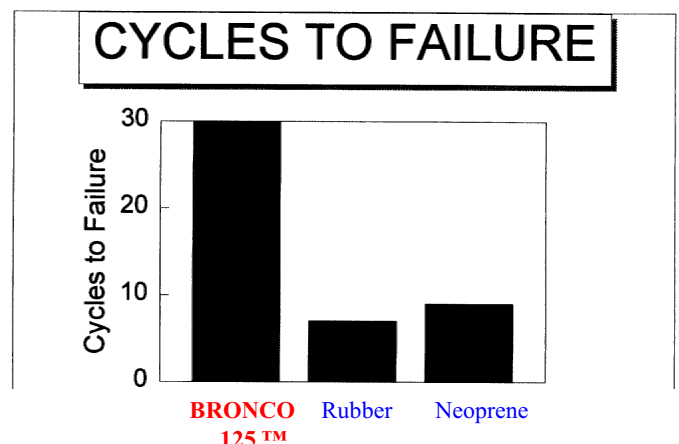
### ● SUPERIOR HEAT AGING

BRONCO-125™ rubber resists cracking and brittleness caused by heat far better than Neoprene or rubber. Comparative heat aging at 250°F. is shown



### ● TOUGHER ABRASION RESISTANCE

Shown below are comparative grinding wheel type abrasion test results on flexible cord jackets. Again, BRONCO-125™ rubber outperforms Neoprene and rubber flexible cord jackets.



**BRONCO-125™**  
**Test Report (continued)**

● **SUPERIOR MECHANICAL STRENGTH**

One measure of the mechanical strength of a flexible cord is resistance to failure under a crushing load. Below are results of crushing strength tests for flexible cords.

**CRUSHING STRENGTH**

	<u>BRONCO-125™</u>	<u>RUBBER</u>	<u>NEOPRENE</u>
	Type SEO	Type S	Type SO
Pounds Force			
@ Failure	3,400	2,000	3,000

● **LIGHTER WEIGHT**

Another important consideration in "portable" power supply cordage is weight. PHILAFIN can offer a lighter, more portable cable than either rubber or Neoprene. Typical weight savings on 12/3 cords are shown as follows:

**12 / 3 CORDAGE WEIGHT**

	<u>BRONCO-125™</u>	<u>RUBBER</u>	<u>NEOPRENE</u>
	Type SEO	Type S	Type SO
Pounds Per 1000 FT.	164	199	235
Weight Reduction	n/a	18%	33%

**COMPARISON OF FLEXIBLE CORD JACKET MATERIALS**

UNAGED PHYSICALS

	<u>BRONCO-125™</u>	<u>RUBBER</u>	<u>NEOPRENE</u>
Tensile Strength (PSI).....	2,000	1,420	1,630
100% Modulus (PSI).....	340	690	770
Elongation (%).....	550	300	300

LOW TEMPERATURE PROPERTIES

	<u>BRONCO-125™</u>	<u>RUBBER</u>	<u>NEOPRENE</u>
Brittle Point (°F).....	-100°	-52°	-38°
Cold bend @ -35°C.....	Pass	Pass	Pass
-50°C.....	Pass	Failed	Failed
-65°C.....	Pass	Failed	Failed

AGING PROPERTIES

	<u>BRONCO-125™</u>	<u>RUBBER</u>	<u>NEOPRENE</u>
Air Oven 7 Days @ 121°C			
% Retention of Tensile.....	123	104	188
% Retention of Elongation.....	89	17	17
Air Oven 7 Days @ 136°C			
% Retention of Tensile.....	150	0	0
% Retention of Elongation.....	116	0	0
Air Bomb 43 Hrs. @ 127°C			
% Retention of Tensile.....	117	56	93
% Retention of Elongation.....	116	18	43

OZONE RESISTANCE

	<u>BRONCO-125™</u>	<u>RUBBER</u>	<u>NEOPRENE</u>
Hours To Cracking (100 ppm/100°F).....	1000	24	300

HEAT DEFORMATION (T<sub>2</sub>/T<sub>1</sub>)

	<u>BRONCO-125™</u>	<u>RUBBER</u>	<u>NEOPRENE</u>
2000 gms @ 121°C.....	.76	.93	.95

MECHANICAL PROPERTIES

	<u>BRONCO-125™</u>	<u>RUBBER</u>	<u>NEOPRENE</u>
(Crushing Strength) Lbs. Force To Failure.....	3,400	2,000	3,000
Abrasion Resistance Cycles To Wear Through Jacket.....	36	18	14

CHEMICAL RESISTANCE

	<u>BRONCO-125™</u>	<u>RUBBER</u>	<u>NEOPRENE</u>
% Diameter Change--30 Day Immersion at Room Temperature			
Alcohol--Ethyl.....	0	-1	0
Ammonia.....	1	2	1
Gasoline--Unleaded.....	61	58	63
Kerosene.....	34	25	17
Oil--Motor 10/40.....	9	6	0
Oil--Vegetable.....	-2	6	0
Skydrol 500.....	0	-3	22
Toluene.....	26	60	56
Water.....	-1	-2	-1