

# TI2007-002

## 25' Cobra Smart NATO DC Plug Cable Assembly



Power Anytime, Anywhere

The Tesla™ Cobra Smart NATO DC Plug Cable Assembly is constructed from a rugged combination of space-age composite materials and corrosion-resistant alloys. It also features Tesla's Cobra NATO plug and DC Connector with T-handle lock. The result is a weatherproof NATO cable assembly that will withstand the harshest battlefield conditions and other extreme environments. Incorporating state-of-the-art electronic control and monitoring circuitry, the Cobra Smart NATO DC Plug Cable Assembly can provide safe and efficient power transfer of up to 3000 peak amps — no more damage or injury to equipment, plugs and personnel.

### Features:

- State-of-the-art electronic control
- Reliable switching up to 3000 peak amps
- Reverse polarity and overvoltage protection
- Clamped cable connections
- UV, fuel, fungus, and oil resistant
- Easy component replacement
- Manufactured in-house
- Exceeds MIL-STD-810G
- Tested to withstand 50 G of force



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# Features and Benefits

## State-of-the-Art Control

The Tesla™ Cobra Smart NATO DC Plug Cable Assembly is equipped with intelligent circuitry to monitor voltage levels and prevent potentially dangerous conditions, such as reverse polarity and over voltages. A status LED located on Cobra NATO Plug end of the cable indicates under and overvoltages, reverse polarity, and good voltage conditions. Only under a “good” voltage condition (shown in *Figure 1*) can power be transferred.



Figure 1: Status LED showing “Power Good”

## Rugged, Durable, Reliable

Made from virtually indestructible composite materials, the plug housing won't crack, melt, blister, dry-rot or disintegrate. In addition, the control electronics are housed in a durable enclosure, surrounded by an impact and abrasion resistant bumper shown in *Figure 2*. Together these features insure that the Tesla™ Cobra Smart NATO DC Plug Cable Assembly will still be in the field long after other cables have failed.

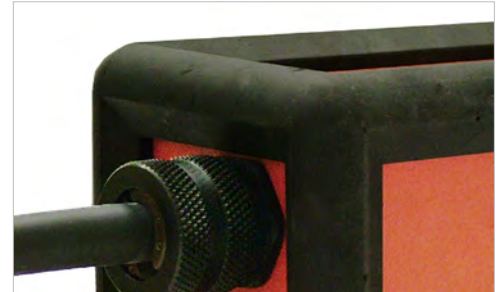


Figure 2: Impact and abrasion resistant bumper

## Internal Cable Connections

Unlike slave cables that are molded directly into the plug housing, easily accessible lugs allow for direct termination inside of the plug (See *Figure 3*). Additionally, compression grommets and bushings provide strain relief. This unique combination of protection eliminates potential shocks from exposed wiring due to cable stretching and splicing.



Figure 3: Easily accessible terminal lugs

## Weatherproof Construction

Through a series of strategically placed seals and bushings, the Tesla™ Cobra Smart NATO DC Plug Cable Assembly is hermetically sealed to lock out rain, snow, sand or any other form of damaging debris.

## Replaceable Contacts

Manufactured from highly conductive alloys, the contacts are resistant to damage and corrosion. Once installed, contacts are hermetically sealed within the plug as shown in *Figure 4*.



Figure 4: Hermetically sealed and easily replaceable contacts

## Insertion/Extraction Tools

Contacts can be easily replaced “in-the-field” without discarding the entire plug using the Insertion/Extraction Tools. The tools and contact replacements can be ordered through Tesla™ Customer Service at 302-324-8910.

# Components - Exploded View



## Accessories

- A. Cobra NATO Plug Positive Insertion/Extraction Tool: TI27000-082  
NSN: 5120-01-527-7729
- B. Cobra NATO Plug Negative Insertion/Extraction Tool: TI2005-126  
NSN: 5120-01-523-8761
- C. Cobra NATO Plug Negative Contact: TI2005-121  
NSN: 5999-01-525-0582
- D. Cobra NATO Plug Positive Post: TI2005-117  
NSN: 5935-01-523-8914
- E. DC Connector Insertion/Extraction Tool: TI2005-488
- F. DC Connector Replacement Contacts: TI2005-490



Figure 5: Under Voltage

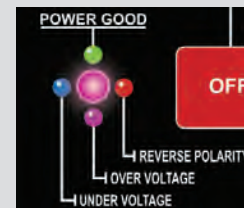


Figure 6: Over Voltage



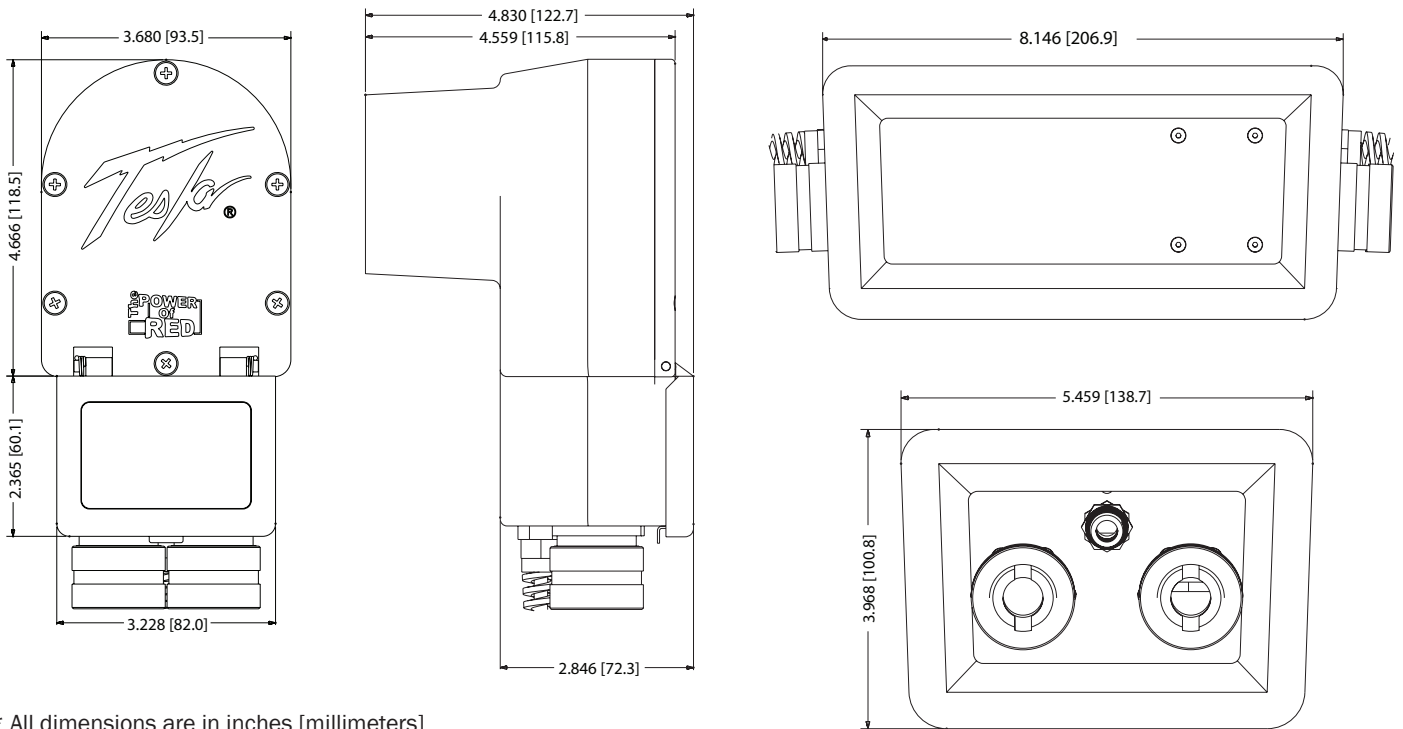
Figure 7: Reverse Polarity

**Figure 5:** When the status indicator is flashing blue, the input voltage is below 24 V. This will not disengage the contactor if it is already engaged.

**Figure 6:** When the status indicator is flashing violet, the input voltage has exceeded 31.7 V. This will disengage the contactor after 1 second.

**Figure 7:** A flashing red status indicator means a reverse polarity condition. This will disengage the contactor instantaneously.

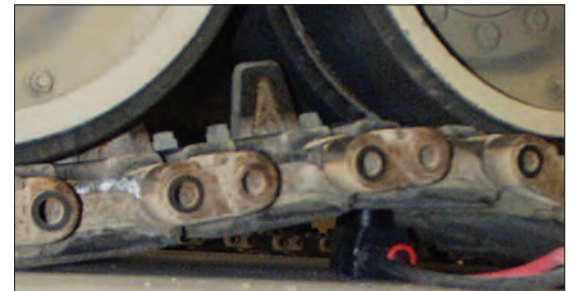
# Dimensions and Technical Specifications



\* All dimensions are in inches [millimeters]

## Technical Specifications:

Input Voltage Range	12 - 32 VDC
Peak Current	3000 A
Rated Current	1500 A
Power Consumption (Disengaged)	170 mA
Power Consumption (Engaged)	500 mA
Inrush Current (@ 28 VDC)	3.8 A @ 130 mS
Air Gap-leakage Path	0.355" (9 mm)
Protection Class	IP28C
Optional Overcurrent Protection Range Overcurrent Protection Delay	1 - 2000 A 10 mS - 1.0 second
Overvoltage Max	60 V
Status Indicator LED	Red = reverse polarity Blue = undervoltage (< 23.9 V) Violet = overvoltage (> 31.7 V) Green = power okay (24.0 V - 31.6 V)
Operating Temperature	-25° to 60° C (-32° to 140° F)
Storage Temperature	-40° to 85° C (-40° to 185° F)
Weight (25 ft cable)	30.6 lbs. (13.88 kg)
Warranty	2 years (3 years optional)



## Field Tested

To prove its toughness and dependability, the Cobra NATO Plug was subjected to the harshest abuse. The photo above shows the NATO plug can withstand the weight of a 70 ton M1 Abrams tank. Even after this severe punishment, the plug was still fully functional.