

www.amphenol-industrial.com

Solar Line

PHOTOVOLTAIC INTERCONNECTION SYSTEM



Amphenol®

ICS 18-4 Release date: January.2012

NORTH AMERICA:

Amphenol INDUSTRIAL OPERATIONS

40-60 Delaware Street
Sidney, New York 13838-1395 - USA
Telephone: 1-607-563-5011 • Fax: 1-607-563-5157

Amphenol INDUSTRIAL OPERATIONS Amphenol POWER SOLUTIONS

34190 Riviera Drive
Fraser, MI 48026 - USA
Telephone: 1-586-294-7400 • Fax: 1-586-294-7402
www.radsok.com

Amphenol TECHNICAL PRODUCTS INTERNATIONAL CO.

2110 Notre Dame Avenue
Winnipeg, MB Canada R3H 0K1
Telephone: 1-204-697-2222 • Fax: 1-204-694-6164
www.tpil.com

Amphenol STEWARD CABLE, INC.

1921 Alta Vista - Midland, Texas 79706 - USA
P.O. Box 11270 - Midland, Texas 79702 - USA
Telephone: 1-432-687-2553 • Fax: 1-432-687-2278
www.stewardcable.com

EUROPE & MIDDLE EAST

Amphenol INDUSTRIAL OPERATIONS EUROPE

Via Barbaiana n. 5 - 20020 Lainate - Milano - Italy
Telephone: 39-02-932-541 • Fax: 39-02-9325-4444

Amphenol SOCAPEX

948 Promenade de l'Arve - Bp29 - 74311 Thyez - France
Telephone: 33-4 50 89 28 00 • Fax: 33-4 50 6 29 75

Amphenol TUCHEL ELECTRONICS GMBH

August - Haeusser Strasse 10
74080 Heilbronn, Germany
Telephone: +49 7131 929 0 • Fax: +49 7131 929 486
www.Amphenol.de

Amphenol INDUSTRIAL OPERATIONS MIDDLE EAST

Office No C-37, Ajman Free Zone- UAE
Tel: +9716-7422494 • Fax: +9716-7422941

ASIA:

Amphenol Industrial Solar Technologies(AIST)

Block 5, Fu An 2nd Industrial Park,
Dayang Road, Fuyong, Shenzhen, China 518103
Telephone: 0755-2991-8389 • Fax: 0755-2991-8310
www.amphenol-industrial.com.cn

Amphenol TECHNOLOGY (ZHUHAI) CO., LTD.

No.63 Xinghan Rd Sanzao Town, Jinwan, Zhuhai,
China 519040
Telephone: (0756) 3989798 • Fax: (0756) 3989768

Amphenol SINCERE FLEX CIRCUITS CO. LTD

No.A, WanAn Industrial Park
LanHe Town, Panyu District, Guangzhou - China 511480
Telephone: 020-3483-9801 • Fax: 020-3483-9800
www.amphenol-gasf.com

Amphenol JAPAN MIL/AERO INDUSTRIAL

689-1, Iseochi, Ritto-shi Shiga 520-3044 - Japan
Telephone: 81-77-553-8501 • Fax: 81-77-551-2200

Amphenol DAESHIN

558 Sosa SongNea Bucheon-city, Kyunggi-DO
Korea 420-130
Telephone: 82-32-610-3800
Fax: 82-32-673-2507/665-6219



Amphenol's solar line helps people achieve energy independence worldwide



**H4 HIGHEST RATED
CURRENT**

**H4 LOWEST
CONTACT RESISTANCE**

Amphenol's Helios H4 is the #1 Ranked Solar Connector in the World

Beating out 26 worldwide competing connectors, Amphenol's Helios H4 Solar connectors achieved the top two ranked positions in an independent annual test comparison of solar connectors performed by Photon lab. The test results were published in *Photon - The Solar Power Magazine* (September, 2011).



Table of Contents

Page No.

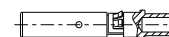
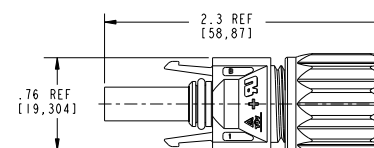
| | |
|---|-------|
| H4 PV cable connector | 1-2 |
| H4 PV panel connector | 3-4 |
| H4 Stamped and formed contact | 5 |
| H4 Branch connector | 6 |
| H4 Protective cap | 7 |
| PowerLink Solar cable | 8-9 |
| HelioLug | 10-11 |
| H4 Over-molded cable assemblies | 12 |
| Inline and over-molded diode and fuse | 13 |
| PV cable assemblies | 14 |
| PV junction box ordering inquiry form | 15 |
| ModLink junction box | 16-17 |
| HelioLink junction box | 18-19 |
| Hercules junction box | 20-21 |
| Thin-film junction box | 22-23 |
| Pencil junction box | 24 |

H4 PV cable connector

H4 Female PV cable connector



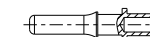
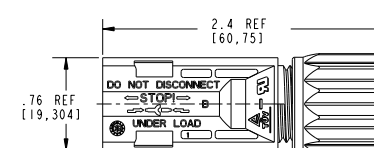
H4 Female socket contact



H4 Male PV cable connector



H4 Male pin contact



Technical Data

| | |
|-----------------------------------|--|
| Rated current | 32A(2.5mm ² , 14AWG), 40A(4.0mm ² , 12AWG), 44A(6.0mm ² , 10AWG), 65A(10.0mm ² , 8AWG) |
| Rated voltage | 1000V (IEC/CEI), 600V(UL) |
| Test voltage | 6kV for 1 minute, 10kV impulse (1.2/50 μs)(IEC) |
| Typical contact resistance | 0.30mΩ for S&F contact, 0.25mΩ for machined contact |
| Contact material | Copper, tin plated |
| Contact system | Machined/cold formed or S&F contact with RADSOK® insert |
| Insulation material | PC |
| Locking mechanism | Snap-lock, special unlocking tool required to un-mate as required by NEC2008 |
| Cable strain relief | Compression gland with ratcheting gland nut |
| Degree of protection | IP68 (1 meter, 1 hour) mated |
| Safety class | II (IEC61140) |
| Pollution degree | 2 (IEC60664) |
| Overvoltage category | III (IEC60664) |
| Flame class | UL94 V-0 |
| Ambient temperature range | -40°C--- +90°C |

How to order

| Product line | Product type | Gender | Connector type | Cable size | Approvals | Packaging | Variations |
|--------------|--------------|--------|----------------|--------------|---------------|------------------------------------|--|
| H4 | Helios H4 | C | Connector | F Female + | C Cable gland | 1 1.5-2.5mm ² / 14AWG | T TÜV I Single bag S S&F contact (single contact) |
| | | | | M Male - | | 2 2.5mm ² / 14AWG | U UL C 100pcs bag T Screw termination (field installation) |
| | | | | P Mated pair | | 4 4.0mm ² / 12AWG | D Dual M 500pcs bag |
| | | | | | | 5 4.0-6.0mm ² /10-12AWG | |
| | | | | | | 6 6.0mm ² /10AWG | |
| | | | | | | 8 10.0mm ² /8AWG | |
| | | | | | | 0 Less contact | |

Ordering example:

H4 C F C 4 D N

H4 PV connector

Female part

Cable connector

4.0mm²/12AWG cable size

Dual approvals

2000pcs per package

How to order assembly tools

| Description | Ordering code |
|-----------------------------|---------------|
| H4 Strip tool | H4TS0000 |
| H4 Crimp Tool | H4TC0000 |
| H4 Crimp Tool(new) | H4TC0001 |
| H4 Crimp Tool (S&F) | H4TC0002 |
| H4 Wrench Tool(new) | H4TW0001 |
| H4 Universal Unlocking Tool | H4TU0000 |
| H4 Tool-Kit | H4TK0000 |

Assembly Tool



Tool-Kit



Universal unlocking tool



Crimp tool for 2.5mm²-6.0mm²
(14AWG-10AWG)



Wrench tool



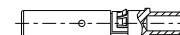
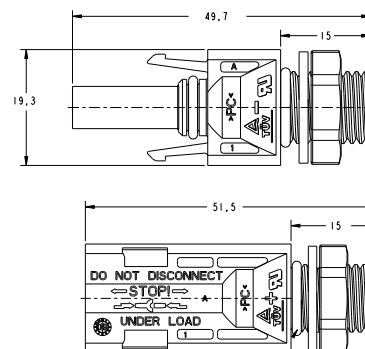
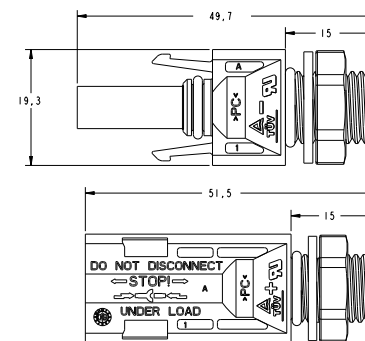
Strip tool for 2.5mm²-6.0mm²
(14AWG-10AWG)

H4 PV panel connector

H4 Female PV panel connector



H4 Female socket contact



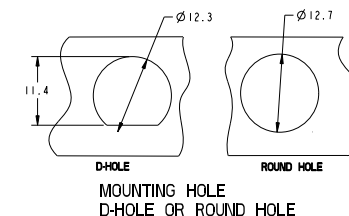
H4 Male PV panel connector



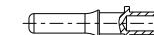
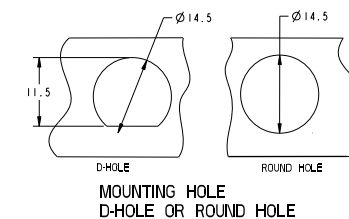
H4 Male pin contact



M12



M14



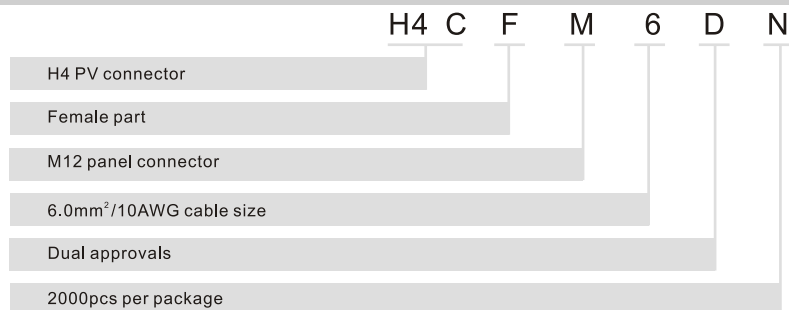
Technical Data

| | |
|----------------------------|--|
| Rated current | 32A(2.5mm ² , 14AWG),40A(4.0mm ² , 12AWG), 44A(6.0mm ² , 10AWG), 65A(10.0mm ² , 8AWG) |
| Rated voltage | 1000V (IEC/CEI), 600V(UL) |
| Test voltage | 6kV for 1 minute, 10kV impulse (1.2/50 μS)(IEC) |
| Typical contact resistance | 0.30mΩ for S&F contact, 0.25mΩ for machined contact |
| Contact material | Copper, tin plated |
| Contact system | Machined/cold formed or S&F contact with RADSOK® insert |
| Insulation material | PC |
| Locking mechanism | Snap-lock, special unlocking tool required to un-mate as required by NEC2008 |
| Cable strain relief | Compression gland with ratcheting gland nut |
| Degree of protection | IP68 (1 meter, 1 hour) mated |
| Safety class | II (IEC61140) |
| Pollution degree | 2 (IEC60664) |
| Overvoltage category | III (IEC60664) |
| Flame class | UL94 V-0 |
| Ambient temperature range | -40℃--- +90℃ |

How to order

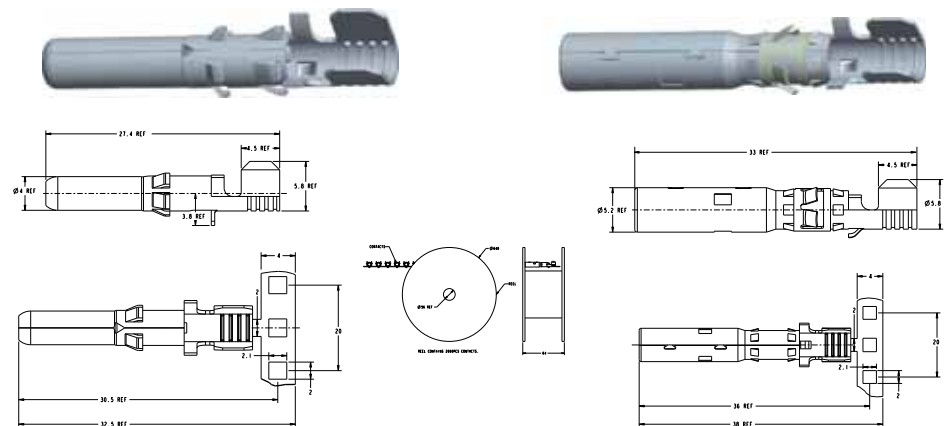
| Product line | | Product type | | Gender | | Connector type | | Cable size | | Approvals | | Packaging | | Variations | |
|--------------|-----------|--------------|-----------|--------|------------|----------------|-----------|------------|----------------------------------|-----------|------|-----------|------------|------------|--|
| H4 | Helios H4 | C | Connector | F | Female + | M | Panel M12 | 1 | 1.5-2.5mm ² / 14AWG | T | TÜV | I | Single | S | S&F contact (single contacts) |
| | | | | M | Male - | N | Panel M14 | 2 | 2.5mm ² / 14AWG | U | UL | C | 100pcs bag | T | Screw termination (field installation) |
| | | | | P | Mated pair | | | 4 | 4.0mm ² / 12AWG | D | Dual | M | 500pcs bag | | |
| | | | | | | | | 5 | 4.0-6.0mm ² /10-12AWG | | | | | | |
| | | | | | | | | 6 | 6.0mm ² /10AWG | | | | | | |
| | | | | | | | | 8 | 10.0mm ² /8AWG | | | | | | |
| | | | | | | | | 0 | Less contact | | | | | | |

Ordering example:



H4 Stamped and formed contact

- Packaged on a reel for automatic assembly

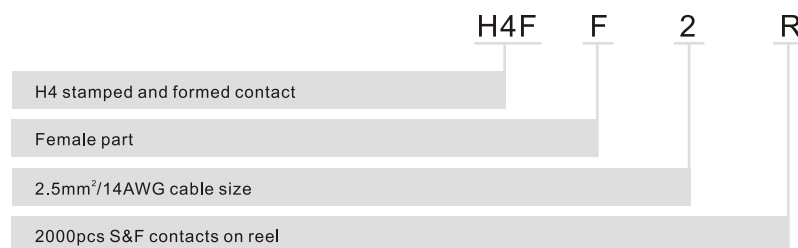


How to order

| Product line | | Contact type | | Gender | | Cable size | | | Packaging | | Variations |
|--------------|-----------|--------------|-------------|--------|----------|------------|----------------------------|--|-----------|--------------|------------|
| H4 | Helios H4 | F | S&F contact | F | Female + | 2 | 2.5 mm²/14AWG | | R | 2000pcs reel | |
| | | | | M | Male - | 4 | 4.0 mm²/12AWG;6.0mm²/10AWG | | | | |

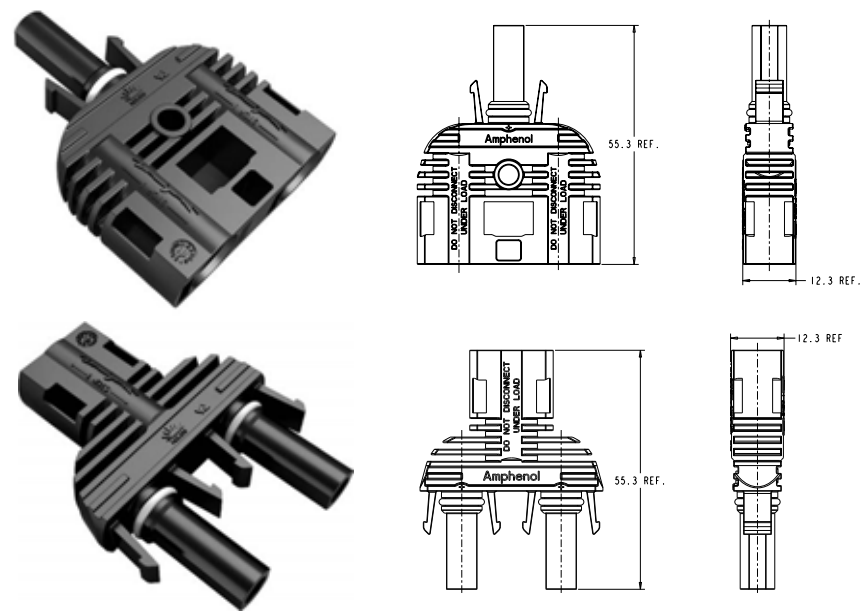
* The above code applies to the H4 cable connector and H4 panel connector with Stamped and Formed contacts.

Ordering example:



H4 Branch Connector

■ Quick field solar installation



How to order

| Product line | | Product type | | Gender | |
|--------------|-----------|--------------|------------------|--------|------------------------------|
| H4 | Helios H4 | Y | Branch connector | X | FFM (branch 2 female/1 male) |
| | | | | Y | MMF (branch 2 male/1 female) |

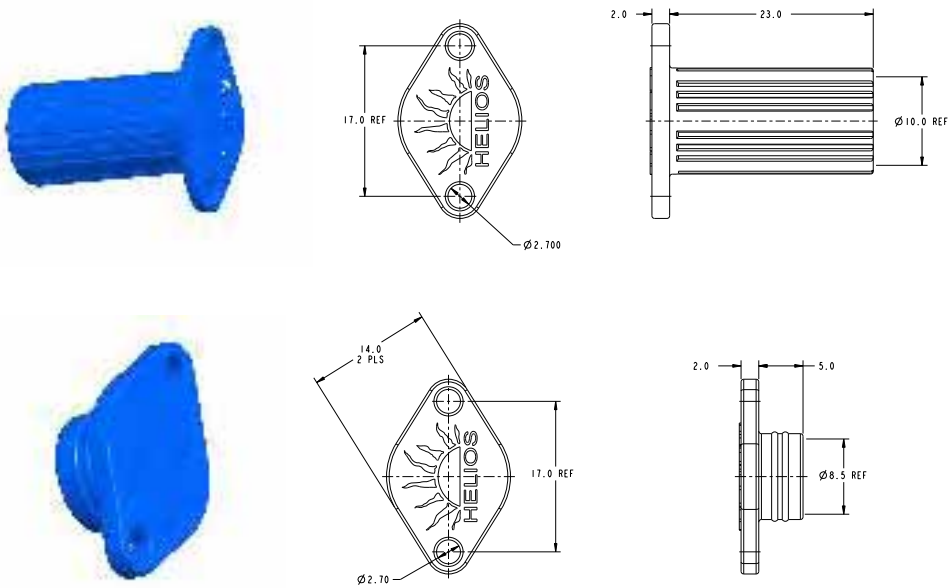
Ordering example:

H4 Y Y

H4 branch connector

2 males, 1 female

H4 Protective Cap



How to order

| Product line | | Product type | | Gender | | Variations |
|--------------|-----------|--------------|----------------|--------|----------|------------|
| H4 | Helios H4 | P | Protective cap | F | Female + | |
| | | | | M | Male - | |

Ordering example:

H4 P F

H4 protective cap

Female part

PowerLink solar cable

Halogen free photovoltaic cables are used as the interconnection wiring for photovoltaic power systems.



Features:

- Flexibility at low temperature
- Thermoset-insulated conductor
- Thermoplastic jacket
- Long-term insulation resistance to moisture
- Range from 1.5mm² to 25mm²



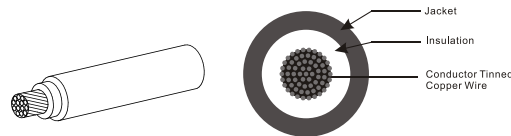
Certificate:

TÜV and UL certified according to the latest regulations

Structure:

Conductor: Stranded bare or tinned copper
 Insulation: XLPE material (white and black)
 Jacket: XLPE material (Black, Red and Blue)

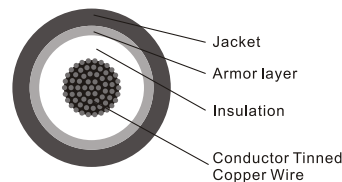
Temperature range:
 -40 °C to +125°C
 Environmental influence resistance:
 Acid, alkalinity, UV, ozone and hydrolysis-resistant.



ArmorLink Solar Cable

Advantages:

- Rodent resistant
- Extra protection layer



Made using UL4703 and TÜV 2Pfg 1169 as guidelines.



PowerLink solar cable application:

Used in heavy-duty and harsh environment interconnection wiring, can be easily combined with our Helios H4 PV connector and junction box series for photovoltaic system applications.



Cold
Snow
Low temperature



Sun
Drought
High temperature



Rain
Moisture

How to order

| Product line | Product | Cable color | Cable type | Cable size | Approvals | Variations |
|--------------|--------------|----------------------------|--------------------|---|------------------------------|---------------|
| HC | Helios cable | P PowerLink - Standard | B Black - standard | L VDE 0295 - CLASS 2 7 STRANDS (USE-2) | 1 1.5 mm ² /16AWG | T TÜV |
| | | A ArmorLink - Rodent Proof | R Red | M MULTIWIRE 19 STRANDS (UL only) | 2 2.5 mm ² /14AWG | U UL |
| | | U PowerLink - USE-2 | L Blue | H VDE 0295 - CLASS 5 (UL, TÜV and Dual) | 4 4 mm ² /12AWG | U1 UL 1000V |
| | | | G Grey | | 5 25mm ² /3AWG | D Dual 600V |
| | | | O Brown | | 6 6 mm ² /10AWG | D1 Dual 1000V |
| | | | | | 8 10mm ² /8AWG | N None |
| | | | | | 9 16mm ² /4AWG | |

Notes: UL cable comes in AWG only

TÜV cable comes in mm² only

Dual cable comes marked with AWG and mm²

VDE 2095-CLASS 2 is 7 strands cable

Multi wire stranding is 19 strands cable

VDE 2095-CLASS 5 is high stranded cable with extra flexibility

HelioLug

The only UL2703 certified grounding lug on the market.

Included Components:

- 1) Lay in lug (tin-plated), solid copper lay-in lug with a stainless-steel set screw)
- 2) Stainless star washer
- 3) Stainless star bolt
- 4) Stainless serrated lock nut



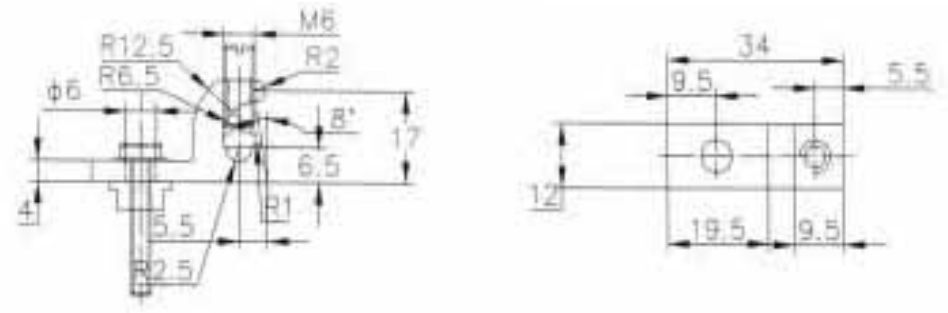
Features:

- The only UL 2703 certified grounding lug available
- Meets all new NEC 2008 requirements
- Quick and easy installation
- For use with virtually all module frames and racks, (0.09 inches (2 mm) to 0.25" (6.35 mm) thick)
- Capable of accepting 4-12 AWG solid copper conductors
- Code compliant "first make - last break" grounding system
- Compatible with all module grounding holes, (0.16" (4mm) to 0.295" (7.5mm))
- Certified reusable hardware for servicing without replacement



How to order

| 1 | | 2 | | 3 | | 4 | |
|--------------|---------------------------|--------------|--------------------------------|-----------|----|-----------|------------|
| HG | | L | | U | | I | |
| Product Line | | Product Type | | Approvals | | Packaging | |
| HG | Helios Grounding Products | L | HelioLug (Wire Range 4-12 AWG) | U | UL | I | Individual |
| | | | | | | M | 1000pcs |



INSTALLATION INSTRUCTIONS:

- Place the lug to the designated module grounding hole with the star washer between the grounding lug and the module frame in order to break through the anodizing and establish electrical contact with the aluminum. Torque the bolt and nut to 30 in-lbs. NOTE: These instructions provide guidelines for general use. If available, the specific module manufacturer's instructions for the location of the star washer are to be followed.

- For the attachment to the racking, slide the bolt into the mounting channel of the extrusion or into a 1/4" Hole drilled through the extrusion. Place the star washer between the racking and lug and secure the nut and bolt to 30 in-lbs. NOTE:

- Insert a 4 to 12 AWG copper wire into the lug and tighten the lug set screw to the copper wire to the torque based on the wire size. (4-6 AWG at 35 in-lbs and 8-12 AWG at 30 in-lbs). Do not exceed the maximum rated overcurrent protection, 20 A (12 AWG), 40 A (10 AWG), 90 A (8 AWG), 150 A (6 AWG), and 200 A (4 AWG).

H4 Over-molded PV cable assemblies



Trunk and Drop cable assembly

Protection degree:IP68
Cable range: 2.5mm²/14AWG -10.0mm²/8AWG
Temperature range: -40 °C - +90 °C



Over-molded H4

Protection degree:IP68
Cable range: 2.5mm²/14AWG -10.0mm²/8AWG
Temperature range: -40 °C - +90 °C



Y,T,R,Cross junction

Protection degree:IP68
Cable range: 2.5mm²/14AWG -10.0mm²/8AWG
Temperature range: -40 °C - +90 °C

* Customized cable length and termination are available upon request.

Inline and Over-molded Diode and Fuse



Inline diode connector



Over-molded inline diode cable assembly

Protection degree:IP68
Cable range:2.5mm²/14AWG -10.0mm²/8AWG
Temperature range: -40 °C - +90 °C
Withstand rating:10kA
Voltage rating:1500V max
Amperage rating:30A max
Connector options: M-M,M-F,F-F



Inline fuse connector



Over-molded inline fuse cable assembly

Protection degree:IP68
Cable range:2.5mm²/14AWG -10.0mm²/8AWG
Temperature range: -40 °C - +90 °C
Surge rating:600V max
Blocking voltage: customer specified

How to order

| Product line | | Product type | | Connector type | | Volatage | | Current rating | |
|--------------|-----------|--------------|--------------|----------------|---------------|----------|-------|----------------|----------|
| H4 | Helios H4 | F | Molded fuse | FM | female,male | 1 | 600V | 01 | 1A |
| | | D | Molded diode | MM | male/male | 2 | 1000V | 02 | 2A |
| | | | | FF | female/female | | | 03 | 3A |
| | | | | | | | | * | up to10A |

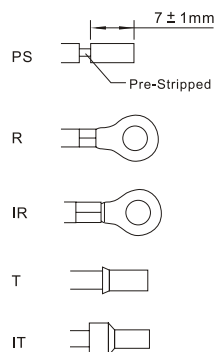
PV cable assemblies

How to order

| Product line | | Product type | | Gender | | Connector type | | Cable size | | Approvals | |
|--------------|-----------|--------------|-----------|--------|------------|----------------|-------------|------------|---------------|-----------|------|
| H4 | Helios H4 | C | Connector | F | Female + | C | Cable gland | 2 | 2.5 mm²/14AWG | T | TÜV |
| | | | | M | Male - | M | Panel M12 | 4 | 4.0 mm²/12AWG | U | UL |
| | | | | P | Mated pair | N | Panel M14 | 6 | 6.0 mm²/10AWG | D | Dual |
| | | | | | | O | Over-mold | 8 | 10.0mm²/8AWG | | |

| Cable length(mm) | | Cable color | | Termination | | Variations |
|------------------|---|-------------|--|-------------|------------------------|------------|
| | B | Black | | PS | Pre-stripped wire | |
| | R | Red | | R | Ring terminal | |
| | L | Blue | | IR | Isolated ring terminal | |
| | G | Grey | | T | Tube terminal | |
| | O | Brown | | IT | Isolated tube terminal | |

Examples of cable assemblies and definition of cable length:



* Other terminals and customized strip length are available.

Amphenol PV Junction box ordering inquiry form

Please fill in the following form so we can select the right product for your application.

Amphenol

| | | | | | |
|---|-----------------------|--|-----------------------|------------------------------|---|
| Customer Name: | | Country/Area: | | Sales: | |
| Part Name: | | Part Name: | | Request Date: | |
| Description: | | | | Demand / Year: | |
| Target Price: | | Sample request: | | Sample request date: | |
| Information 1: (Photovoltaic Cable Standard) : UL4703 and/or UL854, TÜV2Pfg1169/2007 compliant | | | | | |
| Information 2: (Photovoltaic Connector Standard) : UL6703(UL1703), TÜV EN50521/2008 compliant | | | | | |
| Information 3: (Photovoltaic Junction Box Standard) : UL1703, TÜV DIN V VDE V 0126-5/2008 (&EN50548) compliant | | | | | |
| Location: <input type="checkbox"/> North-America <input type="checkbox"/> Europe <input type="checkbox"/> Other | | | | | |
| Certification: <input type="checkbox"/> TÜV Cert. <input type="checkbox"/> UL Cert. <input type="checkbox"/> TÜV&UL Cert. | | | | | |
| Junction Box Type: <input type="checkbox"/> Monocrystalline Silicon <input type="checkbox"/> Amorphous Silicon <input type="checkbox"/> BIPV <input type="checkbox"/> Polycrystalline silicon <input type="checkbox"/> Other | | | | | |
| Rails Qty: | Doide Qty: | | Nominal Power[W]: | Open Circuit Voltage[V]: | |
| Short Circuit Current[A]: | Max Power Voltage[V]: | | Max Power Current[A]: | Max System Voltage[V]: | |
| Cable length(mm): <input type="checkbox"/> Includes connector <input type="checkbox"/> Does not include connector | | | | Copper foil width/thickness: | |
| Cable Size | TÜV Spec. | <input type="checkbox"/> 2.5mm ² <input type="checkbox"/> 4.0mm ² <input type="checkbox"/> 6.0mm ² | | | Cable color: <input type="checkbox"/> Black(Recommended) <input type="checkbox"/> Black&Red |
| | UL Spec. | <input type="checkbox"/> 14AWG <input type="checkbox"/> 12AWG <input type="checkbox"/> 10AWG | | | |
| | TÜV&UL Spec. | <input type="checkbox"/> 2.5mm ² /14AWG <input type="checkbox"/> 4.0mm ² /12AWG <input type="checkbox"/> 6.0mm ² /10AWG | | | |
| Connector: <input type="checkbox"/> Amphenol H4 <input type="checkbox"/> Other: | | | | | |
| Attachment: <input type="checkbox"/> (Attach drawing) <input type="checkbox"/> (Attach Sample) <input type="checkbox"/> (Attach remark) | | | | | |
| Comments: | | | | | |

ModLink Junction Box



Features:

- Modular concept; only add what you need, when you need it
- “Future proof” : Ready to accept future smart modules
- Base unit is a complete junction box
- Base unit thermally separated from panel
- Uses industry standard connections
- Plug-and-play; no additional components needed
- No wasted materials when upgrading
- Smart module snaps into base; no drilling, no additional cabling.
- Cost effective on every level: For panel OEM, distributor, installer, Owner/operator
- Can be upgraded at any time



Helios ModLink Modular Junction Box

The ModLink Modular Junction Box provides PV panel manufacturers an advanced junction box that enables cutting edge smart technology at no additional cost. Built-in industry standard connectors mate directly to Amphenol Industrial Helios H4 connectors or to a wide range of “Smart” modules. These include DC/AC converters/optimizers, performance monitoring and DC/AC microinverters.

The ModLink Junction Box consists of a base unit that is firmly attached to the back sheet of the panel. The base unit already contains protective diodes and built-in connectors; ready to be used as a basic junction box from the start. When it's time to upgrade just disconnect the connectors, snap-in the smart module, reconnect the connectors and you're done.

This modular technology provides instant plug-and-play versatility. Smart modules can be added (or removed) at any time without any additional materials needed or wasted.

The base module retains the basic junction box functionality and protection, no matter if there are smart modules attached or not. This allows for exchange or removal of smart modules if repairs or upgrades are needed, without losing the basic function of the PV module.

There is no longer a need for “pigtailed” attached to the photovoltaic module, making manufacturing and handling easier.

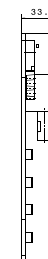
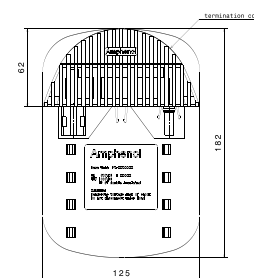
The Helios ModLink Modular Junction Box is just one of the many solar solutions Amphenol Industrial has to offer.

| Technical Data | |
|-----------------------|---------------------------------------|
| Terminals | 4 |
| Terminals per pin | 500,000 |
| Insulation material | 4-Fluoropolymer (FEP) |
| Stranded wires | 3 AWG 7-strand |
| Total current | 12 A |
| Temperature | 3-120°C (23-100°F) |
| 50 super-conductor | Tellurium (Te) 100% Superconductivity |
| Operating temperature | -100°C (-140°F) |
| Operating voltage | 100V |
| Operating frequency | 50-100 Hz (60-120 Hz) 50-100 Hz |
| Operating current | 10 A |

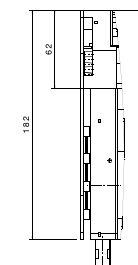
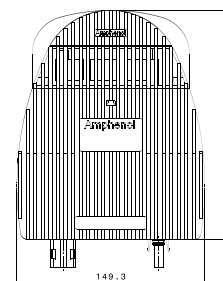


For ampt Optimizer Smart Module (DC/DC Converter) please refer to IDS-5

Base Unit Dimensions



Installed Module Dimensions



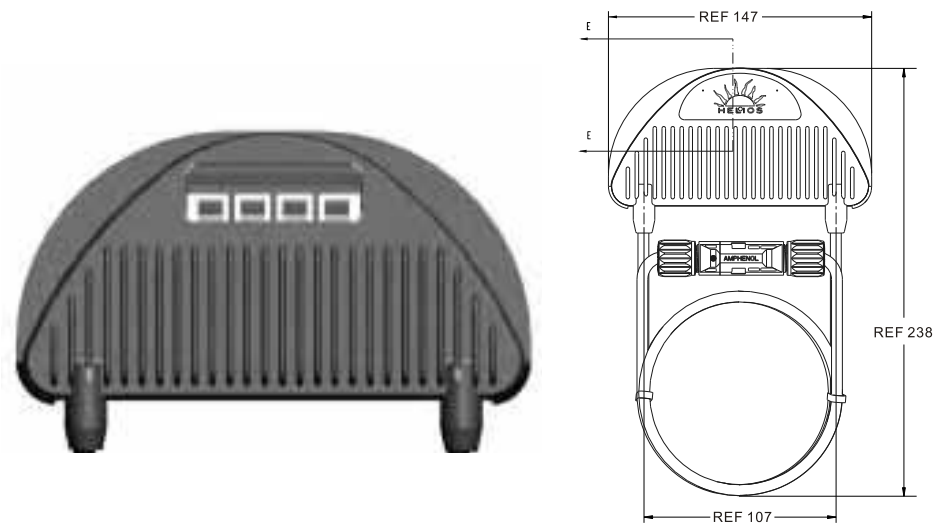
Module Installation



Module Installed



HelioLink™ PV Junction Box



- Features:**
- Hermetically sealed design; no moisture ingress, no condensation
 - Patented, finger-type heat exchanger protects diodes from thermal destruction, even under adverse conditions
 - Thermal separation from backsheet prevents formation of hot-spot
 - Designed for automatic placement and termination
 - Compact design
 - Built to last, maintenance free



| Technical Data | |
|--------------------------------------|---|
| Rated current | Up to 30A |
| Rated operating voltage | 1000V DC (TÜV) , 600V DC (UL) |
| Rated max. reverse voltage per diode | 45 VDC (standard) 120 VDC (optional) |
| Protection degree | IP 68 (potted), IP67 (non-potted) |
| Flame class | UL94-V0 |
| Temperature range | -40° C ~ +90° C |
| Connection method | welding |
| Waterproofing structure | Hermetically sealed, over-molded body |
| Termination seal | Termination area may be potted (no seal on cover) or non-potted (lip seal on cover) |

How to order

| Product line | | Product type | | Terminals and Diodes | | Terminal style | | Diode rating | |
|--------------|-----------|--------------|------------------------|----------------------|---------------------|----------------|-----------------|--------------|----------|
| HB | Helios JB | B | HelioLink junction box | A | 4 contacts/3 diodes | A | Clamp contacts | P | 20A 100V |
| | | | | | | B | Solder contacts | Q | 20A 45V |

| Sealing type | | Cable size | | Adhesive | | Cable length (Ln)* | | Cable length (Lp)* | | Variations |
|--------------|---------|------------|---------------|----------|-----|--------------------|--------|--------------------|--------|------------|
| A | Potting | A | 6.0 mm²/10AWG | Y | Yes | A | 1000mm | A | 1000mm | |
| B | O-ring | B | 4.0mm²/12AWG | N | No | B | 900mm | B | 900mm | |

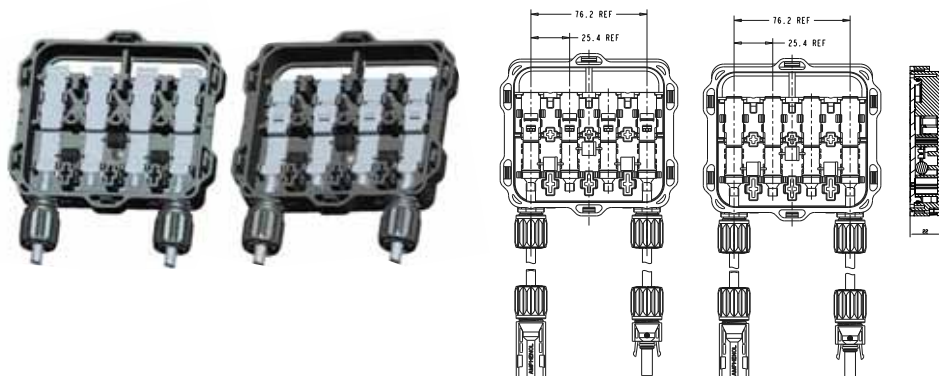
* Ln: cable length on negative end; Lp: cable length on positive end

-Please contact us for additional variations

Ordering example:

| | | | | | | | | | |
|---|----|---|---|---|---|---|---|---|----|
| | HB | B | A | B | Q | B | A | N | AA |
| HelioLink PV junction box | | | | | | | | | |
| 4 contacts/3 diodes | | | | | | | | | |
| Soldering connection | | | | | | | | | |
| Diode rated 20A/45V | | | | | | | | | |
| O-ring seal | | | | | | | | | |
| 6.0mm²/10AWG cable size | | | | | | | | | |
| Without adhesive tape | | | | | | | | | |
| 1000mm cable length from both negative and positive end | | | | | | | | | |

Hercules™ PV Junction Box



Features:

Same dimensions, multi variations
IP67 rated
Breathing hole for air exchange



Technical data

| | |
|--------------------------|--|
| Terminal quantity | 3 rails or 4 rails |
| Rated current | 30A |
| Rated voltage | UL: 600V DC IEC/TÜV: 1000V DC |
| Number of bypass diodes | 2 or 3 or 4 or 6 |
| Connection cross-section | 12AWG/4.0mm ² or 10AWG/6.0mm ² |
| Temperature range | -40°C to +90°C |
| Protection degree | IP67 |
| Dimensions | 117x107x22mm |
| Flame class | UL94 V-0; 5VA |
| Ribbon connection | Clamping, soldering or spot welding |
| Breathing hole | With or Without |
| Connector type | Amphenol H4 |

How to order

| Product line | | Product type | | Terminals and Diodes | | Terminal style | | Diode rating | |
|--------------|-----------|--------------|-----------------------|----------------------|-------------------------------------|----------------|------------------------------------|--------------|----------|
| HB | Helios JB | H | Hercules Junction box | A | 4 contacts/3 diodes | A | Clamp contacts | A | 12A 200V |
| | | | | B | 3 contacts(2 left/1 right)/2 diodes | B | Solder contacts | B | 12A 40V |
| | | | | C | 3 contacts(1 left/2 right)/2 diodes | C | Solder contacts left&right opening | C | 15A 40V |
| | | | | D | 4 contacts/6 diodes | D | Solder contacts left opening | D | 30A 40V |
| | | | | E | 3 contacts(2 left/1 right)/4 diodes | E | Solder contacts right opening | E | 20A 40V |
| | | | | F | 3 contacts(1 left/2 right)/4 diodes | F | Spot weld contacts | F | 15A 45V |

| Sealing type | Breathing hole | Cable size | Adhesive | Cable length (Ln)* | Cable length (Lp)* | Variations |
|--------------|----------------|------------------------------|----------|--------------------|--------------------|------------|
| A Potting | Y Yes | A 6.0 mm ² /10AWG | Y Yes | A 1000mm | A 1000mm | |
| B O-ring | N No | B 4.0mm ² /12AWG | N No | B 900mm | B 900mm | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

* Ln: cable length on negative end; Lp: cable length on positive end

- Please contact us for additional variations

Ordering example:

| | HB | H | A | B | C | A | Y | A | N | AA |
|---|----|---|---|---|---|---|---|---|---|----|
| Hercules PV junction box | | | | | | | | | | |
| 4 contacts/3 diodes | | | | | | | | | | |
| Soldering connection | | | | | | | | | | |
| Diode rated 15A/40V | | | | | | | | | | |
| Potting seal | | | | | | | | | | |
| With breathing hole | | | | | | | | | | |
| 6.0mm ² /10AWG cable size | | | | | | | | | | |
| Without adhesive tape | | | | | | | | | | |
| 1000mm cable length from both negative and positive end | | | | | | | | | | |

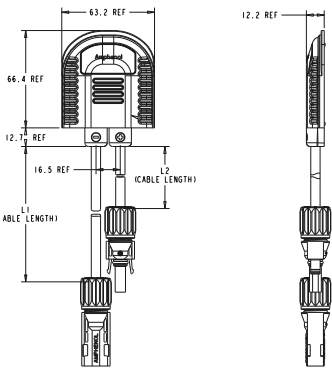
Thin-film PV junction box



- Features:**
- Low profile
 - Over-molded design for better sealing
 - SMD for efficient heat dissipation



| Technical Data | |
|-------------------|---------------------------|
| Rated current | Up to 20A |
| Rated voltage | 1000V DC (TÜV) , 600V(UL) |
| Protection degree | IP 67 |
| Flame class | UL94 V-0 |
| Temperature range | -40° C ~ +90° C |
| Termination style | Solder |
| Sealing of cover | Potting |



How to order

| Product line | | Product type | | Terminals and Diodes | | Terminal style | | Diode rating | |
|--------------|-----------|--------------|------------------------|----------------------|--------------------|----------------|-----------------|--------------|-----------|
| HB | Helios JB | T | Thin film junction box | G | 2 contacts/1 diode | B | Solder contacts | G | 5A 1000V |
| | | | | | | | | H | 10A 1000V |
| | | | | | | | | J | 8A 1000V |
| | | | | | | | | K | 15A 1000V |
| | | | | | | | | P | 20A 100V |
| | | | | | | | | Q | 20A 45V |
| | | | | | | | | N | N/A |

| Sealing type | | Cable size | | Adhesive | | Cable length (Ln)* | | Cable length (Lp)* | | Variations |
|--------------|---------|------------|----------------------------|----------|-----|--------------------|--------|--------------------|--------|------------|
| A | Potting | B | 4.0mm ² /12AWG | Y | Yes | A | 1000mm | A | 1000mm | |
| | | C | 2.5 mm ² /14AWG | N | No | B | 900mm | B | 900mm | |

* Ln: cable length on negative end; Lp: cable length on positive end
- Please contact us for additional variations

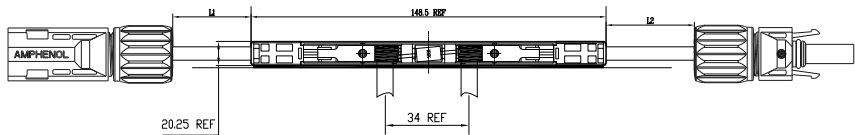
Ordering example:

| | HB | T | G | B | Q | A | C | N | AA |
|---|----|---|---|---|---|---|---|---|----|
| Thin-film PV junction box | | | | | | | | | |
| 2 contacts/1 diode | | | | | | | | | |
| Soldering connection | | | | | | | | | |
| Diode rated 20A/45V | | | | | | | | | |
| Potting seal | | | | | | | | | |
| 2.5mm ² /14AWG cable size | | | | | | | | | |
| Without adhesive tape | | | | | | | | | |
| 1000mm cable length from both negative and positive end | | | | | | | | | |

Pencil PV junction box for BIPV



Features:
Low-profile, stable performance and easy to install
Provides the user with a practical and economical solution
Tin-solder termination



| Technical Data | |
|---------------------|---------------|
| Max. voltage | 1000V |
| Rated current | 20A |
| Bypass current | 3A/10A |
| Scope of power | 40 ~ 120W |
| Ambient temperature | -40, ~+85.C |
| Protection degree | IP65 |
| Cable cross-section | 2.5mm2 |
| Dimension L*W*H | 130 * 8 * 9mm |
| Part number | PV-100329-000 |



Your powerful connection to the sun

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Amphenol:](#)

[H4YX](#) [H4YY](#)