MELTRIC CORPORATION

Product Improvement Announcement

Issue date: 05 March 2013

New Crimp or Solder Contacts for PN12c

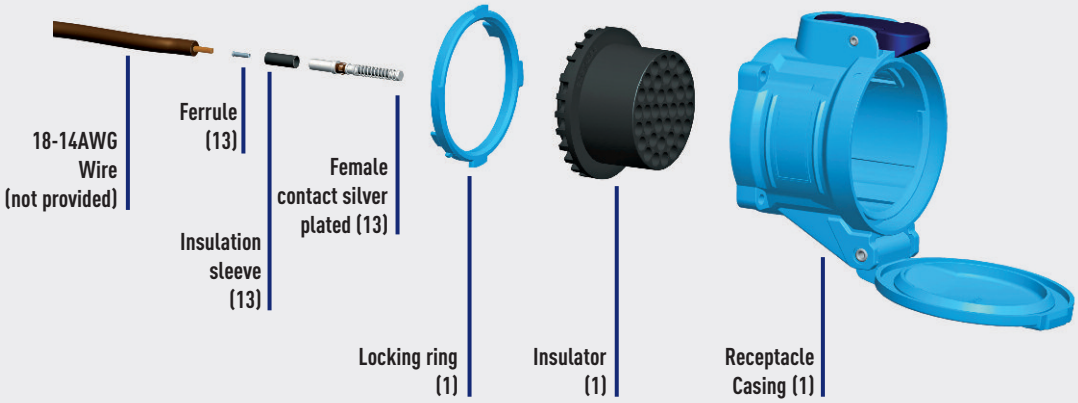
product improvement description

Effective immediately Meltric's PN12c devices will feature contacts that can be crimped or soldered. Previously the contacts could only be soldered. Each inlet and receptacle will now be supplied with 13 individual contacts (12 for the device and one extra if needed). The user can decide to install all 12 contacts or they can install less if 12 are not needed. Crimping offers advantages for some because it reduces installation complexity while still ensuring a quality connection.

Note: Inlets/receptacles of the new design are interchangeable with and will mate with receptacles/inlets of the old design provided that the same number of contacts are installed in the matching contact locations.

Receptacle (Female)
(DSN37c Shown)

PN12c	Part #:	03-A4001
PN12c Metal	Part #:	07-A4001
PN12c SS	Part #:	07-A4001-SS



Inlet (Male)

PN12c	Part #:	03-A8001
PN12c Metal	Part #:	07-A8001
PN12c SS	Part #:	07-A8001-SS

New Crimp or Solder Contacts for PN12c

faq

How do I order the new style PN12c?

Part numbers for the inlets and receptacles have changed. See following pages for related catalog pages.

Can I still order the 'old style' PN12c?

No the old style device is no longer in production.

Are instructions available?

Detailed PN12c instructions are included at the end of this announcement, and they are posted on meltric.com.

Is the PN12c UL or CSA listed?

The new style PN12c is not UL or CSA listed. The older style design was CSA listed but not UL listed. UL or CSA listing will likely be pursued some time in the future.

ordering & pricing

Pricing for the new style PN12c can not be found in the 2013 price book. Contact customer service for inlet and receptacles pricing. Reduced pricing for devices with less than 12 pins is not available because all 12 contacts are now shipped with each device for assembly in the field.

Receptacles

Voltage	Polarity	Part # Poly	Part # Metal	Part # Stainless Steel
600V	11P+G	03-A4001	07-A4001	07-A4001-SS

Receptacle Options	Part #
Reverse Interiors	Recept # - 001
With Flush Mount (poly only)	Recept # - 142
Locking Pawl	Recept # - 824-300

Inlets

Voltage	Polarity	Part # Poly	Part # Metal	Part # Stainless Steel
600V	11P+G	03-A8001	07-A8001	07-A8001-SS

Inlet Options	Part #
Reverse Interiors	Inlet # - 001

Accessories

Miscellaneous Accessories	Part #
Multi-Contact Removal Tool	9-LD12-37
Crimper Tool	4CN30 (Greenlee Wire Crimper #45505)
European Crimping Tool	61-CA500 (Knipex 97 52 30)

New Crimp or Solder Contacts for PN12c

new PN12c catalog page

PN12c Multipin – 7.5A
Plugs & Receptacles

Ratings

- **Voltage**
  600 VAC Max/130 VDC
- **Amperage Rating**
  5A Current Interrupting
  7.5A Non-Current Interrupting
  ! PN12c is capable of handling 4-20mA low current applications
- **Environmental Ratings**
  IP66+IP67
- **Temperature Range**
  Min -40°F / Max 140°F
  See pg 220 for temps below -15°F.
- **Wiring Capacity**
  Min 18 AWG Max 14 AWG
- **Listings**
  CE*
  * Contact Customer Service

For PN12c dimensions, see pgs 165-166

New Feature

- **Crimped Contacts**
  PN12c devices now feature contacts that can be crimped or soldered. Each device is supplied with 13 contacts so that the product can be set up to suit application needs.

Main Options

Reverse Interiors

Flush Mount

Locking Pawl

See pgs 197-206 for detailed information on these options

Multipin Plugs & Receptacles

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Receptacle (female)

Don't forget to add installation accessories to your order

Voltage	Polarity	Part # Poly	Part # Metal
600V	11P+G	03-A4001	07-A4001

Inlet (male)

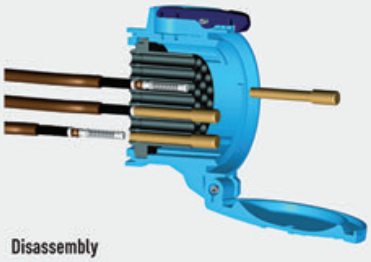
Voltage	Polarity	Part # Poly	Part # Metal
600V	11P+G	03-A8001	07-A8001

Simple Assembly and Disassembly

DSN37c shown

Assembly

To insert contacts when they have been wired is simple. Push wired contact into rear of insulator until it stops to complete the installation.



Disassembly

To remove, use the tool provided. Push tool from front onto contact until tool stops. Contact is then released at rear of insulator.

Receptacle Options	Part #
Reverse Interiors	Recept # - 001
With Flush Mount (poly only)	Recept # - 142
Locking Pawl	Recept # - 824-300

Inlet Options	Part #
Reverse Interiors	Inlet # - 001

PN12c Order Example:
To order a device with a reverse interior add ***-001*** *to the inlet and receptacle part numbers.*
*PN12c Receptacle 5P+G 03-A4001-**001***
*PN12c Inlet 5P+G 03-A8001-**001***
Appropriate accessory part numbers must also be included on the order.

New Crimp or Solder Contacts for PN12c

new PN12c catalog page

PN12c Multipin – 7.5A

Stainless Steel Plugs & Receptacles

Ratings

- **Voltage**
  600 VAC Max/130 VDC*
- **Amperage Rating**
  5A Current Interrupting
  7.5A Non-Current Interrupting
  ! PN12c is capable of handling 4-20mA low current applications
- **Temperature Range**
  Min -40°F/Max 140°F
- **Wiring Capacity**
  Min 18 AWG Max 14 AWG

For PN12c SS dimensions, contact Customer Service

Receptacle (female)

Inlet (male)

Don't forget to add installation accessories to your order

Voltage	Polarity	Part # Stainless Steel
600V	11P+G	07-A4001-SS

Voltage	Polarity	Part # Stainless Steel
600V	11P+G	07-A8001-SS

NEW Feature!

New Feature

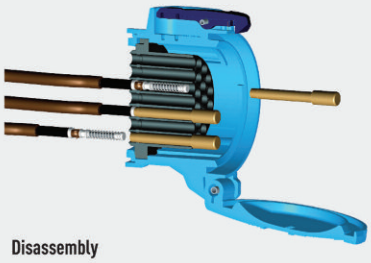
- **Crimped Contacts**
  PN12c devices now feature contacts that can be crimped or soldered. Each device is supplied with 13 contacts so that the product can be set up to suit application needs.

Simple Assembly and Disassembly

DSN37c shown

Assembly

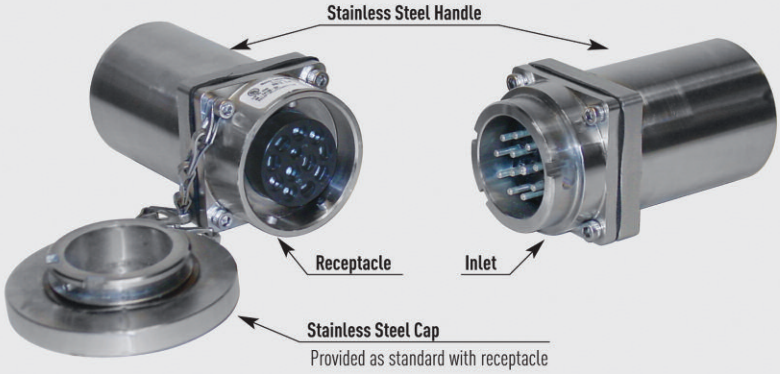
To insert contacts when they have been wired is simple. Push wired contact into rear of insulator until it stops to complete the installation.



Disassembly

To remove, use the tool provided. Push tool from front onto contact until tool stops. Contact is then released at rear of insulator.

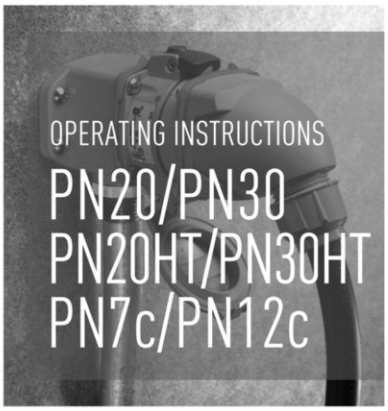
PN12c Stainless Steel Multipins are made of machined 304 Stainless Steel.



Multipin Plugs & Receptacles

New Crimp or Solder Contacts for PN12c

new instructions



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A manufacturer of products using **Marechal technology**

meltric.com

GENERAL

PN Series Standard Duty plugs and receptacles are designed to offer superior safety, durability and consistent, electrical contact performance. Please follow the instructions below to ensure the proper installation, operation and maintenance of this product.

RATINGS

Meltric's PN7, PN20 and PN30 plugs & receptacles are listed in accordance with UL 1682, CSA 22.2 No. 182.1 and IEC 60309-1. The PN12c is listed in accordance with IEC 60309-1. The amperage, voltage and environmental ratings are indicated in Table 1.

Table 1 - General Ratings

	PN12	PN7	PN20	PN30
Current Interrupting	5A	15A	20A	20A
Non-Current Interrupting	7A	20A	30A	30A
Voltage	600VAC	600VAC	600VAC	600VAC
Frequency	50-400 Hz	50-400 Hz	50-400 Hz	50-400 Hz
Environmental	IP66+67	IP66+67	IP66/IP67 IP54/IP55	IP66/IP67 IP54/IP55

*PN20HT and PN30HT are current interrupting up to 480V only, environmental rating is IP44.

INSTALLATION

PN Series plugs and receptacles should be installed by a qualified person in accordance with all applicable local and national electrical codes. Before starting, verify that the power has been disconnected, all product ratings are appropriate for the application and the conductors meet code requirements and are within the capacities of the terminals noted in Table 2. NPT Guidelines are detailed in Table 3.

Table 2 — Wiring Terminal Capacity* (in AWG)

Model	Wire Size	
	Min	Max
PN/20/30	14	8
PN/20HT/30/HT	14	8
PN7c	18	10
PN12c/PN12cSS	18	14

*Capacity is based on THHN wire sizes.

Table 3 - NPT Guidelines

NPT	Cable Range
.50"	.062 - 0.50
.75"	.187 - 0.75
1.00"	.437 - 1.10
1.25"	.750 - 1.375
1.50"*	.890 - 1.650
2.00"*	1.125 - 2.438
2.50"*	1.750 - 2.565

* PN12cSS only

General Notes & Precautions

1. This product must be installed by a certified personnel.
2. Do not tin terminal wire ends.
3. Do not use moisture repellent sprays on the contacts.
4. Do not back terminal screws fully out.
5. Self-tapping screws are provided for use with some polymeric accessories. High torque may be required to drive them in. Once they are seated, care should be taken in order to avoid over-tightening them against the plastic material.
6. ⚠ Meltric threaded handles come with tapered style threads. The use of fitting seal tape is recommended to maintain watertightness of all NPT fittings and joints.
7. Various handles and cord grip options may be used. These instructions are based on handles provided with integral multi-layer bushing cord grips.
8. If the plug and receptacle are stainless steel then stainless steel accessories must be used.

ENVIRONMENTAL

Optimum operating conditions are achieved by installing IP66/IP67 plugs and receptacles with the latch at the top.

To prevent water ingress, non-watertight plugs and receptacles must always face downwards when not mated.

Wire Strip Length

Wire strip lengths are indicated in Table 4. Strip lengths for cable sheathing will depend on the specific application. When used with handles, the cable sheathing should extend into the handle to ensure secure cord gripping.

Table 4 - Wire Strip Lengths – Dimension A

	Receptacle		Plug/Inlet	
Device/Contact	Inches	mm	Inches	mm
PN20/30	3/8	10	3/8	10
PN20HT/30HT	3/8	10	3/8	10
PN7c	5/16	8	5/16	8
PN12c/PN12cSS	25/64	10	3/8	10

Terminal Screw Tightening Torques

The wiring terminals are spring-assisted to prevent loosening due to wire strand settlement, vibration and thermal cycling. Avoid over-tightening. Appropriate tools and tightening torques are indicated in Table 5.

Table 5 - Terminal Screw Tightening Torques

	Torque		Required Screwdriver or Allen Wrench
Device/Contact	in-lbs	N-m	
PN20/30	8	0.9	3 mm or 1/8" precision tip
PN20HT/30HT	8	0.9	3 mm or 1/8" precision tip
PN7c	8	0.9	3 mm or 1/8" precision tip
PN12c/PN12cSS	-	-	crimp/solder type terminals

Wiring the Terminal Connections

Verify that power has been disconnected prior to wiring the conductors to the plug and receptacle. Wiring must be made according to all applicable local and national electrical codes. Check that the rating is correct for the installation. Follow the conductor-coding and terminal markings detailed in Table 6. This product must be electrically grounded. A grounding terminal is provided on all metal accessories, with a green screw and a washer.

For Screw Type Terminals

Insert cable through handle and strip cable jacket to adequate length. The cable jacket should extend at least 1/2" into handle. Back out terminal screws only far enough for conductor to clear. Strip each conductor per Table 4. Twist the strands of each conductor together and insert fully into the terminal. Tighten terminal screws per Table 5.

PN12c Crimped/Soldered Terminal Wire Connections:

1. Strip each conductor to 25/64-inches (10-mm).

2A. For 18-16 AWG wires, insert Ferrule into contact.

2B. For 14 AWG Wires (max), the Ferrule is not required.

3. Insert stripped wire end into Ferrule or contact. (Perform either step 4 or 5)

4A. 18-16 AWG Wires – For Crimping the Contacts, use either North American Contact Crimping Tool 4CN30 (using crimping slot 12-10) or Crimp contact with European] Contact Crimping Tool 61-CA500 (using 4 MM slot).

4B. 14 AWG Wires – For Crimping the Contacts, use either North American Contact Crimping Tool 4CN30 (using crimping slot 8) or Crimp contact with European Contact Crimping Tool 61-CA500 (using 4 MM slot).

5. Caution: Soldering of the wire into the contact must be performed with the contact out of the Interior Insulator to prevent damage to the insulator.
   - Using tin solder and a 50W soldering iron, heat the terminal for approximately 30 seconds. While heating, apply the soldering wire into the hole at the bottom of the terminal and let it penetrate by capillarity action. Let it cool down without any mechanical stress.
6. Slide the Heat Shrink Insulation Sleeve over the contact until it butts up against the contact shoulder. Note: Sleeve must be applied for device creepage insulation. Please see picture.

7. With a Heat Gun that has a temperature range of 600°F to 950°F, apply heat evenly 360° around the sleeve until it shrinks around the contact and wire.

Assembly of PN12c Contacts

Once wired, the contacts must be inserted into the rear of their respective insulating block. The rear side of the inlet/plug or receptacle/connector is considered as the flat surface of the 4-bolt hole mounting surface.

Assembly

Disassembly

New Crimp or Solder Contacts for PN12c

new instructions

1. Before insertion of a contact into an insulator, please review the insulator's contact numbering scheme so the ground and each contact is placed into the proper hole.
2. Push the wired contact into the insulating block until it stops and snaps into place.
3. Ensure its correct mounting by slightly pulling on the contact.
4. The male contacts are solid for their entire length and are inserted with the contact tip first into the rear of the inlet/plug.
5. The female contacts consist of a flexible braid and spring and are inserted with the contact tip first into the rear of the lidded receptacle/connector.
6. Insert the Provided Hole Plugs into the unused holes in the front of each insulating block. Note: If a new Receptacle or Inlet is to mate with a previously installed device, pay particular attention to the number of contacts and numbered position in the Receptacle or Inlet. Continuity will not be obtained unless the male and female contacts are evenly mated.

Disassembly of PN12c Contacts

1. To remove the contact from the insulating block, the provided Multi-Contact Removal Tool 9-LD12-37 must be used. From the front side of the insulating block, slide the contact removal tool over the contact.
2. Push until the contact pops out the back side of the insulating block.
3. **Caution:** Each contact is designed to be removed from the insulating block a maximum of 3 times. New contacts should be used if contacts are removed more than 3 times.

Table 6 - Conductor Coding and Terminal Markings

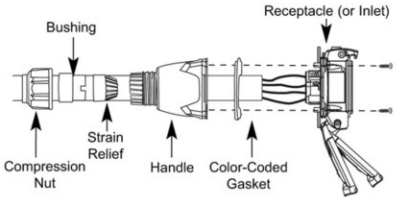
Terminal ID	Function
"G", "E" or GND	Green equipment grounding conductor only (or green with yellow stripe).
"N"	White or gray, system ground (neutral conductor only "N")
PN20/PN30/PN20HT/PN30HT Models	
"1" or "R1" (Black) "2" or "S2" (Red) "3" or "T3" (Blue)	"Hot" conductors, no specific lettered terminal applies to any specific colored conductor
PN7c/PN12c Models	
"1" to "6" or "1" or "11"	"Hot" conductors, no specific lettered terminal applies to any specific colored conductor

ASSEMBLY

Verify that power has been disconnected prior to assembly.

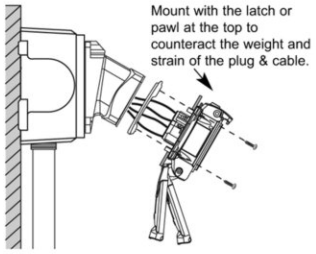
For In-Line Connections

Insert the cable through the handle and gasket. Strip the cable jacket to provide a workable wire length, being mindful that the jacket must extend into the handle to achieve a secure grip. Then strip the wires to the lengths indicated in table 4. When applicable back out the terminal screws far enough (but not completely) to allow the conductors to pass. Insert the conductors fully into their respective terminals and hand tighten to the torques indicated in table 5.



For Mounted Receptacles/Inlets

Insert the cable through the wall box and cut to allow adequate length. Strip the cable jacket to allow a workable wire length. Strip the individual cables to the lengths indicated on Table 4. When applicable back out the terminal screws far enough (but not completely) to allow the conductors to pass. Insert the conductors fully into their respective terminals and hand tighten to the torques indicated in Table 5. Assemble the receptacle/inlet and the color gasket to the box with the appropriate hardware.



Hole Pattern for Custom Mounting

In applications where custom mounting to a panel or box is desired, the clearance and mounting holes should be drilled as indicated in the following diagram and Table 7.

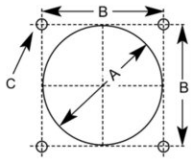


Table 7 - Custom Mounting Dimensions

	'A'		'B'		'C'	
Model	Inches	mm	Inches	mm	Inches	mm
PN20/30	2.00	50	1.65	42	.19	5.0
PN20HT/30HT	2.00	50	1.65	42	.19	5.0
PN7c	2.00	50	1.65	42	.19	5.0
PN12c	2.00	50	1.65	42	.19	5.0
PN12cSS	2.00	50	1.65	42	.19	5.0

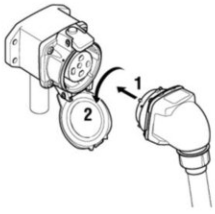
OPERATION

To ensure safe and reliable operation, Meltric plugs and receptacles must be used in accordance with their assigned ratings. They can only be used in conjunction with mating receptacles or plugs manufactured by Meltric or another licensed producer of products bearing the marechal™ technology trademark.

Meltric plugs & receptacles are designed with different keying arrangements, so that only plugs and receptacles with compatible contact configurations and electrical ratings will mate with each other.

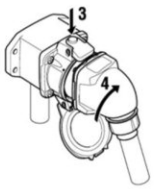
Connection

To connect, open the protective plug cap, align the red dots on the plug and receptacle bodies, insert plug into receptacle, apply force and rotate the plug 20° counterclockwise (CCW). The contacts will mate and he circuit will close.



Disconnection

To open the circuit and remove the plug, press the pawl, apply inward force and rotate the plug 20° clockwise (CW). The plug can be safely withdrawn from the receptacle. The plug contacts remain shrouded until after the circuit is disconnected. Close protective plug cap to prevent contamination by dirt, dust or other debris.



LOCKOUT PROVISIONS

The plug cap can be locked with a locking pawl except PNHT or PN12cSS.

Screw: Plug inserted or cap closed, turn the 5/16" screw with an Allen key until it reaches the bottom. Do not over tighten.

MAINTENANCE

Meltric products require little on-going maintenance. However, it is a good practice to periodically perform the following general inspections:

- Check the mounting screws for tightness.
- Verify that the weight of the cable is supported by the strain relief mechanism and not by the terminal connections.
- Check the IP gaskets for wear and resiliency. In wet/wash-down environments, the gaskets should be inspected periodically (6 months) for wear and hardness. Replace gaskets as needed.
- Verify the electrical continuity of the ground circuit every 6 months.
- Check the contact surfaces for cleanliness and pitting.

Deposits of dust or debris can be rubbed off the contacts with a clean cloth. Under no circumstances should the contact surfaces be filed since this will remove the silver-nickel, butt-contact tip degrade contact consistency. Sprays should not be used since they tend to collect dirt. If any significant pitting of the contacts or other serious damage is observed, the device should be replaced.

Receptacle contacts may be inspected by qualified personnel. This should only be done with the power disconnected. Any repair or service must be performed with genuine Meltric parts only.

MANUFACTURER'S RESPONSIBILITY

Meltric's responsibility is strictly limited to the repair or replacement of any product that does not conform to the warranty specified in the purchase contract. Meltric shall not be liable for any penalties or consequential damages associated with the loss of production, work, profit or any financial loss incurred by the customer.

Meltric Corporation shall not be held liable when its products are used in conjunction with products not bearing the marechal™ technology trademark. The use of Meltric products in conjunction with mating devices that are not marked with the marechal™ technology trademark shall void all warranties on the product.

Meltric Corporation is a member of the international association, BECMA: the Butt-contact Electrical Connectors Manufacturers Association.
For more information, visit, www.becma.ch

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