VALENTINI

Wiring manual

Syntax SGH

Power Insert

Inline and Panel Male

SGH 8.1 | SGH 16.1

Syntax Wireasy Technology

15/12/2021 Rev_0.4

Preliminary operations

SGH Female Power Insert

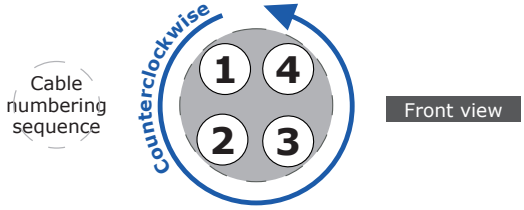
Preparation for all versions (both Inline and Panel-mount)

1

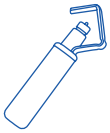
Best practice

Cable check

Check the sequence of the Ethernet cables: make sure it progresses **COUNTERCLOCKWISE** from 1 to 4.
If not, use the opposite end of the cable. This operation makes wiring easier and more orderly.



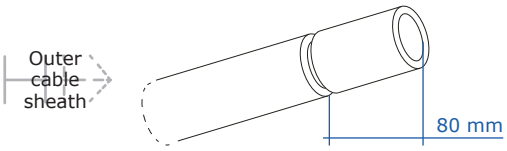
2



Sheath stripping

Outer sheath stripping

From the end of the cable, cut and remove **80 mm** of the **OUTER SHEATH**.



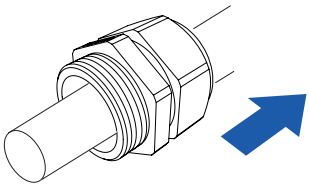
Inline version

1

Assemble

Cable gland insertion

Put the **CABLE GLAND** on the cable. Make sure the threaded part will be nearer the extremity of the cable where the gland is inserted.

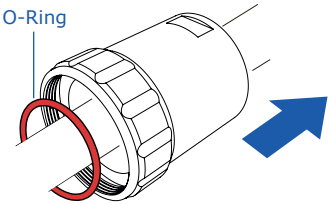


2

Assemble

Backshell and O-Ring insertion

Insert the **BACKSHELL** down the cable, in such a way the **REAR** part of the backshell is inserted first. The **REAR** of the backshell is the part where the machined areas for tightening with a wrench are. Then insert the **O-RING** down the cable.



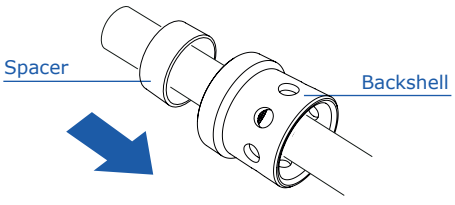
Panel version

1

Assemble

Backshell and Spacer insertion

Insert the **BACKSHELL** down the cable, in such a way the **REAR** part of the backshell with the holes for cable fastening is inserted first. Then insert the **SPACER**.

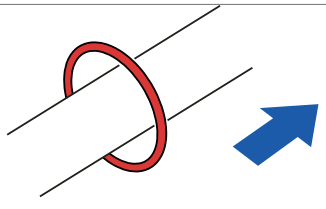


2

Assemble

O-Ring insertion

Insert the **O-RING** down the cable.



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Preparation and wiring – Power cables

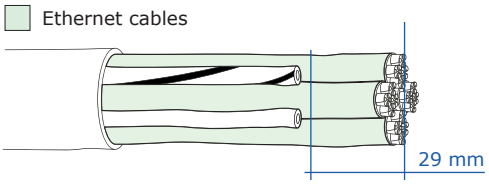
SGH Female Power Insert

1

Cut off

Cable preparation

Cut the power cables **29 mm** shorter.

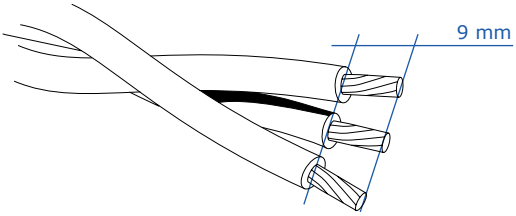


2

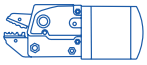
Wire stripping

Power contacts crimping

Strip all the power conductors removing **9 mm** of their jackets.



3

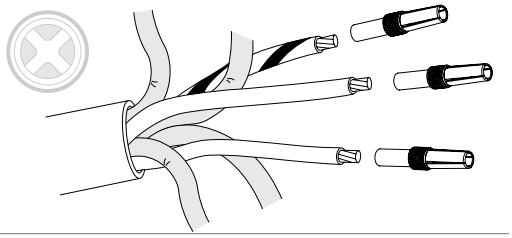


Crimp

Power contacts crimping

Set the crimping tool for the needed cable section (6 mm2 for 32amp connector; 2.5mm2 for the 16amp connector).

*For both these contact sizes, we recommend using hydraulic or pneumatic tools.

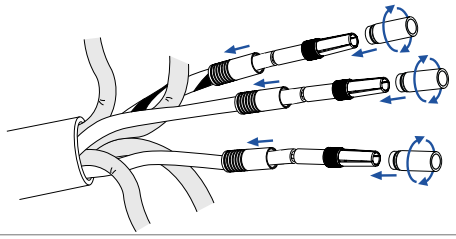


4

Assemble

Rear insulating half-capsule insertion & front insulating half-capsule screwing

Insert the knurled insulating half-capsule down the contact until reaching the cable, then insert the smooth half-capsule and screw it on the contact.

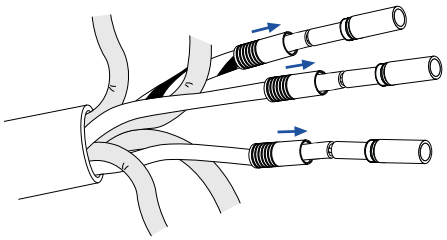


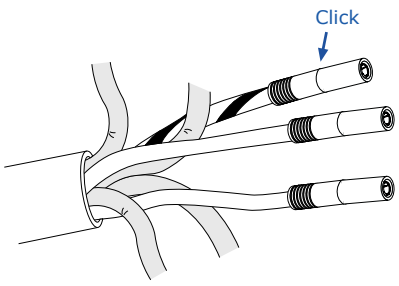
5

Assemble

Capsulock assembling

Move the rear half-capsule onwards until the front half-capsule clicks into it.





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Preparation and wiring – data cables

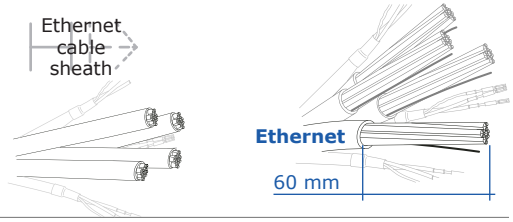
SGH Female Power Insert

1

Sheath stripping

Ethernet cable jacket removal

Cut and remove **60 mm** of the insulating jacket from the **ETHERNET** cables. Repeat this operation for each ethernet cable.

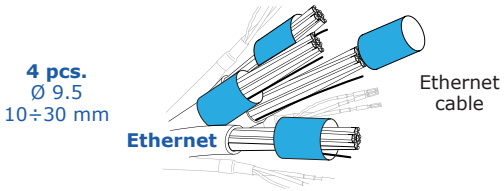


2

Heat shrink tubes Assemble

Heat shrink tubes on ETHERNET cables

Cut 4 heat shrink tubes **Ø 9.5 mm**, length **20 mm** each and insert them on the **ETHERNET** cables.

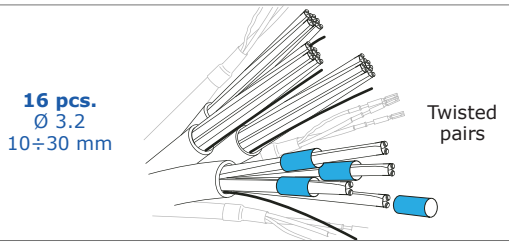


3

Heat shrink tubes Assemble

Heat shrink tubes on twisted pairs

Cut 16 heat shrink tubes **Ø 3.2 mm**, length **20 mm** and insert them on each of the shielded twisted pairs on each **ETHERNET** cable.

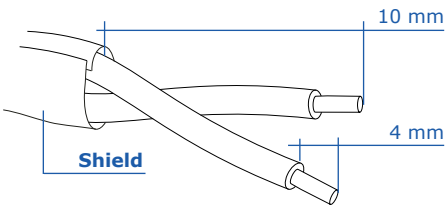


4

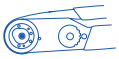
Wire stripping

Twisted pairs stripping

Remove **10 mm** of the shield. Strip **4 mm** of the **TWISTED PAIRS** of the ethernet cables.



5

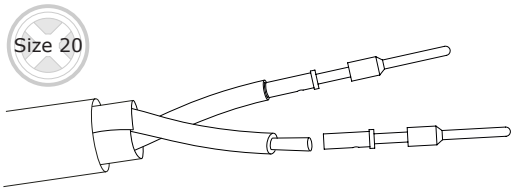


Crimp

Data contacts crimping

Set the **CRIMPING TOOL** on **SIZE 20*** and crimp the contacts.

This setting refers to DMC AF8 tools, part no.* ***SVKTCRIMP*

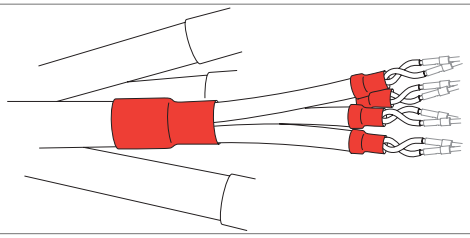


6

Heat

Heat shrinking

Place the bigger heat shrink tubes in such a way as to overlap both the jacket and the shield of the twisted pairs. Place the smaller heat shrink tubes in such a way that the end of the tube nearer the contacts completely overlaps the shield. Repeat these operations for all the other signal cables. Apply heat and shrink the tubes.

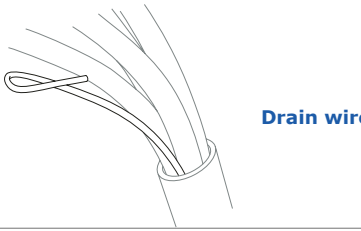


7

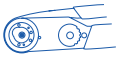
Best practice

Drain wire

Each **ETHERNET** cable has a **DRAIN WIRE** for the shields. Bend the drain wire on itself and make it double. this operation will double up the section of the drain wire for easier crimping.



8

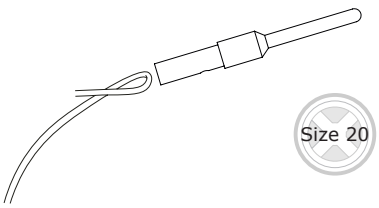


Crimp

Shield drain contacts crimping

Set the **CRIMPING TOOL** on **SIZE 20*** and crimp the shield drain contacts.

This setting refers to DMC AF8 tools, part no.* ***SVKTCRIMP*



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Insertion of contacts, central insert and outer modules

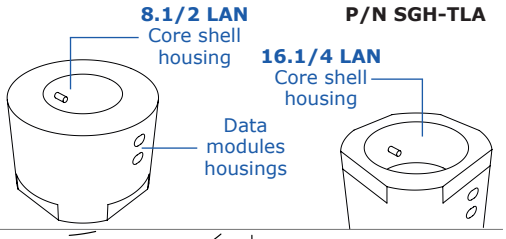
SGH Male Power Insert

-

Best practice

Tool for modules insertion

A specific tool allows easy contact insertion inside the modules. On the tool, there are two housings on the front side where the **DATA CONTACT MODULES** are placed, and a housing on both the top and the bottom for the central insert and **CORE SHELL** (one of those housings is for the 8.1 model, the other is for the 16.1 model).
For correct usage of the tool, clamp it on a **VISE**.

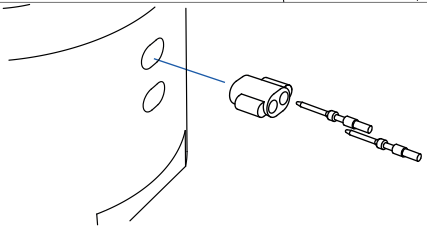


1

Insertion

Insertion of contacts inside the data contact modules

Insert the data modules in the upper slot on the front side of the SGH-TLA tool. Use pliers to insert the contacts all the way down until they are locked in place. The color of the modules are compliant with the color patterns according to 568A/B. At this stage, the polarity of modules is not important, but it is however preferable to insert the contact of the solid-colored wire on the right of the module.

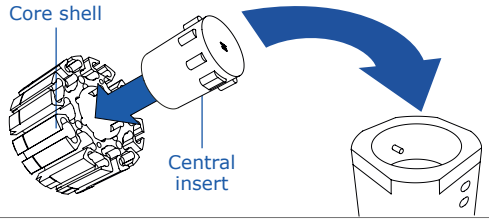


2

Assemble

Central Insert and Core shell assembling

Fit the rubber central insert in the housing at the center of the core shell, paying attention to the keyways. Thanks to the keyways, the two elements are automatically interlocked in the right position. Place the two components with their front side facing downwards when fitting them in the housing on the top of the insertion **TOOL**.



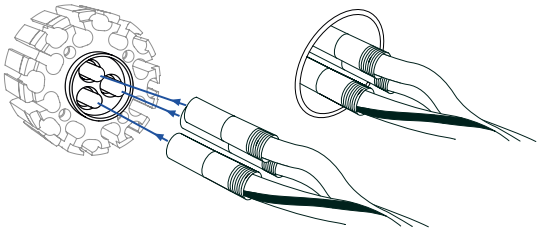
3

Assemble

Connecting electric ferrules with power contacts

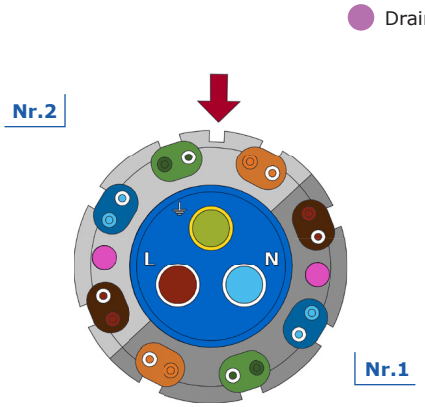
Connect the ferrules (complete with their insulating capsules) onto the power contacts in the central insert. Make sure that the contacts and cables correspond to the polarity information embossed on the insert (pic.01).

pic.01

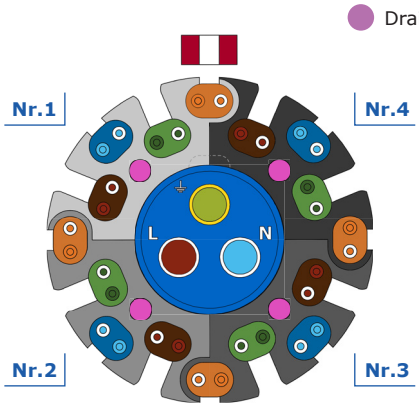


Data modules placement sequence

SGH Male Power Insert



Insertion view, back
8.1/2 LAN



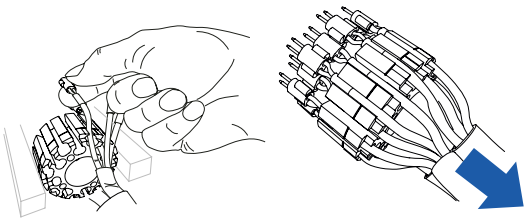
Insertion view, back
16.1/4 LAN

1

Assemble

Modules placement

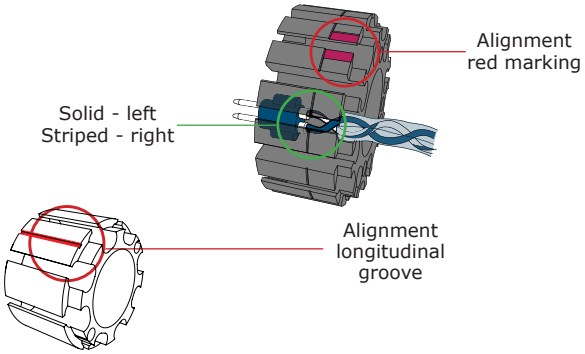
Insert the modules in the correct housings according to the wiring diagram.
Pass the cable through the open slots of the core shell.
Pay attention to the color of the modules and to the color and position of the striped and solid wires of the twisted pairs.



Best practice

Alignment markings

The purpose of the **red marking** for the 16.1 series or the **longitudinal groove** for the 8.1 series is to provide a reference for a correct sequence of the colors of the signal contact pair modules. For a correct polarity of the **twisted pairs**, looking at the wiring side of the shell, insert the solid-colored wires on the right of the modules.



Inline version: final operations

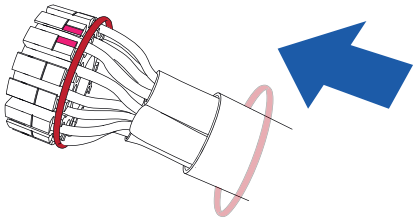
SGH Male Signal Insert

1

Assemble

O-ring assembling

Slide the **O-RING** down the cable onto the core shell and place it in its specific position.

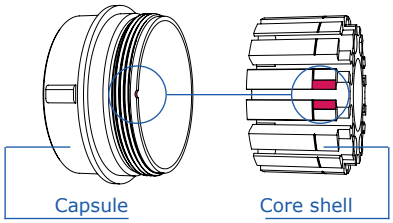


2

Assemble

Core shell and capsule assembling

Insert the wired **CORE SHELL** inside the **CAPSULE** which is still fitted on the tightening tool, making sure that the **ALIGNMENT MARKING** on the core shell is aligned with the red mark on the capsule.

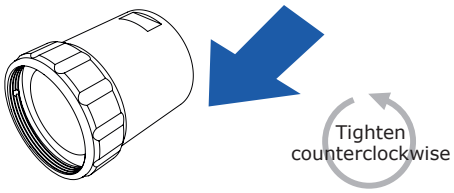


3

Assemble

Backshell tightening

Slide the **BACKSHELL** down the cable onto the capsule, then tighten the backshell screwing it counterclockwise. Use a suitable wrench to tighten.

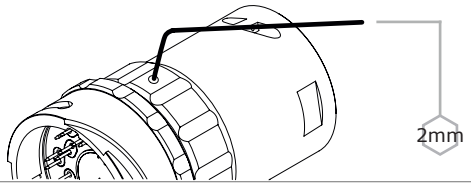


4

Assemble

Anti-rotation grub screw tightening

Use a **2mm** allen screw to tighten the grub screw.

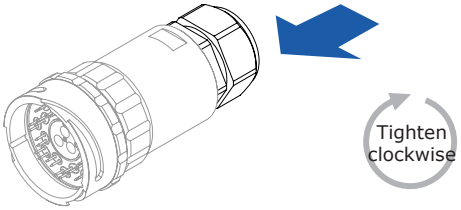


5

Assemble

Cable gland assembling

Slide the cable gland down the cable onto the backshell. Hold the backshell firmly and screw the cable gland clockwise on the backshell.



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Panel version: final operation

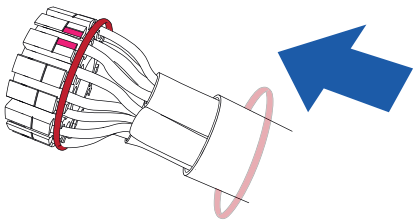
SGH Male Signal Insert

1

Assemble

O-ring assembling

Slide the **O-RING** down the cable onto the core shell and place it in its specific position.

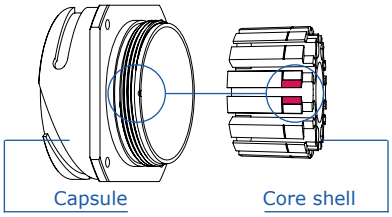


2

Assemble

Waved washer and locking ring assembling

Insert the wired **CORE SHELL** inside the **CAPSULE** which is still fitted on the tightening tool, making sure that the **ALIGNMENT MARKING** on the core shell is aligned with the red mark on the capsule.



3

Assemble

Backshell tightening

Slide the **BACKSHELL** down the cable onto the flanged capsule. In so doing, the spacer will automatically be fitted inside the backshell. Then, tighten the backshell screwing it counterclockwise. Use a suitable wrench to tighten.