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**2019  
Edition**

**Syntax®  
Gigamod  
Hybrid**

**MODULAR  
CONNECTOR  
SERIES**

**SGH  
PATENT PENDING**

***syntax***  
***connect to innovation***

## Hybrid modular connector



The innovative modular SGH Syntax Gigamod Hybrid connector has been designed and built to respond to the ever increasing demand for safe and reliable transmission of power, data and signal, combining multi-connectivity with wiring simplicity and easy assembling.

SGH is a modular system (internationally patented) with different configurations for a wide range of solutions to connect devices used in many different industries. It is made up of two main elements (a central insert and an outer contact modules shell), that are mechanically interlocked with each other and carry different contact types.

The Ethernet pins are inserted into insulated **contact modules** placed inside specific housings machined in the **outer contact modules shell**. There are two SGH shell sizes available, a smaller version for 2 10GBaseT Ethernet lines (or 16 pins for analog/digital signal) and a bigger one for up to 4 10GBaseT Ethernet lines (or up to 32 pin for analog/digital signal).

In the **central insert**, different modules can be fitted for power or analog/digital signal transmission:

### **Power modules**

2p+E 16Amp 2.5mm<sup>2</sup> (EU) / 2p 3w 23Amp AWG12 (USA) or

3p+N+E 16Amp 2.5mm<sup>2</sup> (EU) / 4p 5w 23Amp AWG12 (USA) or

2p+E 32Amp 6mm<sup>2</sup> (EU) / 2p 3w 30Amp AWG10 (USA)

All the power modules feature first-make last-break ground contact

### **Analog/digital AES/EBU signal module**

12 pin

The modules feature alignment keys for correct insertion.

The revolutionary features of the SGH connector that are the core of its innovation compared to traditional hybrid connectors are: **shell as a shield**: as well as a traditional mechanical element to withhold the contacts, the SGH shell becomes an active, integral part of the shielding elements preventing electromagnetic interferences (EMI)

**shell internal design**: around the shell, the Ethernet / signal contact modules are locked inside their machined housings. The contacts are easily inserted in the modules, and the modules are color coded in compliance with EIA / TIA international standards.

**Ethernet shield drain quick connection**: for faster wiring operations and reduced assembling time, the shield of each Ethernet line is crimped to a male pin connected to the connector's capsule through specifically designed elements for shield propagation (2 shield propagators on the 2-Ethernet SGH version, 4 shield propagators on the 4-Ethernet SGH version).





## Part number explanation

Part N.	
EXAMPLE	SGH 4L 3P32 M V - MMP

CONNECTOR SERIES	
SGH Syntax Gigamod Hybrid	<b>SGH</b>

OUTER CONTACT MODULES	
<b>NUMBER OF ETHERNET LINES</b> (gold crimp contacts)	
2 10GBaseT Ethernet	<b>2L</b>
4 10GBaseT Ethernet	<b>4L</b>

CENTRAL INSERT	
<b>NUMBER OF POWER CONTACTS</b> (silver crimp contacts)	
2p+E 16amp 2,5mm <sup>2</sup> / 2p 3w 23amp AWG12	<b>3P16</b>
3p+N+E 16amp 2,5mm <sup>2</sup> / 4p 5w 23amp AWG12	<b>5P16</b>
2p+E 32amp 6mm <sup>2</sup> / 2p 3w 30amp AWG10	<b>3P32</b>
<b>NUMBER OF SIGNAL CONTACTS</b>	
12 silver crimp contacts size 16 (0,15+0,6mm <sup>2</sup> / AWG26+20)	<b>12SC</b>
12 gold crimp contacts size 16 (0,15+0,6mm <sup>2</sup> / AWG26+20)	<b>12GC</b>
<b>BLANK INSERT</b>	
Blank	<b>0000</b>

CONTACT GENDER	
M = male	<b>M</b>
F = female	<b>F</b>

CONNECTOR TYPE	
V = inline	<b>V</b>
P = panel	<b>P</b>

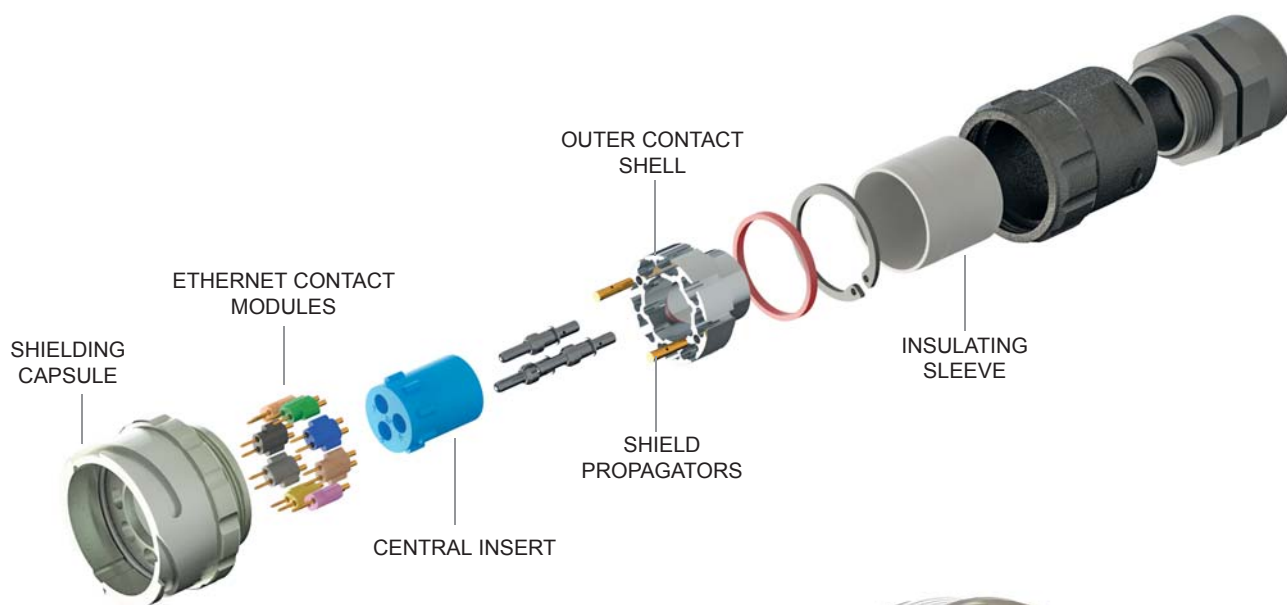
COUPLING DEVICE	
- = bayonet lock ramps on male	<b>-</b>
D = heavy duty locking ring on female	<b>D</b>

METRIC BACKSHELL THREAD SIZE AND CABLE GLAND CLAMPING RANGES			
SIZE	THREAD SIZE	CLAMPING RANGE (mm)	
2L	M 32 x 1.5	7 - 15	<b>MMN</b>
2L	M 32 x 1.5	11 - 21	<b>MMM</b>
2L	M 32 x 1.5	18 - 25	<b>MMO</b>
2L	M 32 x 1.5	Spiral flex 11 - 21	<b>MSF</b>
4L	M 40 x 1.5	15 - 23	<b>MMQ</b>
4L	M 40 x 1.5	19 - 28	<b>MMP</b>
4L	M 40 x 1.5	22 - 32	<b>MMR</b>

NOTES: ALL SGH CONNECTORS SUPPLIED WITH IP67 PROTECTION CAPS AS A STANDARD

## Exploded view



Conductive galvanic surface treatment to propagate shielding onto the capsule

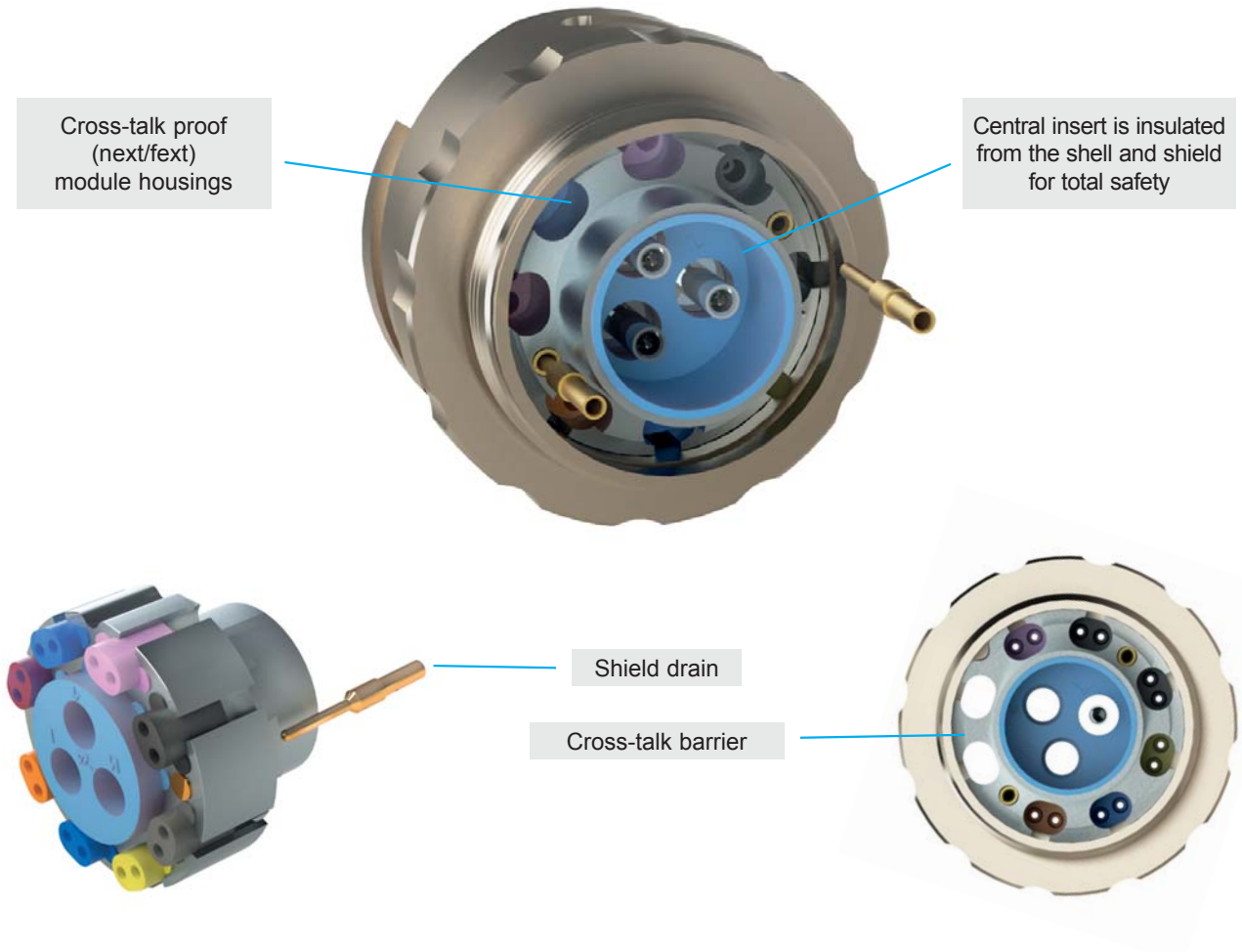


## Core elements



The outer contact modules shell is a CrossTalk-proof section dedicated to signals that are particularly sensitive to interference and cross-talk phenomena, such as ethernet lines and digital signals in general. The central insert is an electrically insulated section for signal types requiring high insulation between contacts, such as main power, speaker lines or analog audio signals.

## Principle of operation



## Outer contact modules



EIA / TIA color coded Male and Female Ethernet contact modules (gold crimp Ethernet contacts)

## Central inserts



- 2p+E 16amp 2,5mm<sup>2</sup> / 2p 3w 23amp AWG12
- 3p+N+E 16amp 2,5mm<sup>2</sup> / 4p 5w 23amp AWG12
- 2p+E 32amp 6mm<sup>2</sup> / 2p 3w 30amp AWG10
- 12 silver crimp contacts size 16 (0,15±0,6mm<sup>2</sup> / AWG26±20)
- 12 gold crimp contacts size 16 (0,15±0,6mm<sup>2</sup> / AWG26±20)
- Blank

## 2 Ethernet versions



### SGH2L0000MV-MMM

SGH2L inline male  
**Outer contact modules :**  
2 Ethernet lines  
**Central insert :**  
Blank  
M32 reduced cable gland (7-15mm)



### SGH2L12GCMV-MMM

SGH2L inline male  
**Outer contact modules :**  
2 Ethernet lines  
**Central insert :**  
12 signal contacts  
M32 normal cable gland (11-21mm)



### SGH2L3P16MV-MMO

SGH2L inline male  
**Outer contact modules :**  
2 Ethernet lines  
**Central insert :**  
Power contacts 2p+E 16Amp / 2p 3w 23Amp  
M32 oversized cable gland (18-25mm)



### SGH2L5P16MV-MMO

SGH2L inline male  
**Outer contact modules :**  
2 Ethernet lines  
**Central insert :**  
Power contacts 3p+N+E 16Amp / 4p 5w 23Amp  
M32 oversized cable gland (18-25mm)



### SGH2L3P32MV-MMO

SGH2L inline male  
**Outer contact modules :**  
2 Ethernet lines  
**Central insert :**  
Power contacts 2p+E 32Amp / 2p 3w 30Amp  
M32 oversized cable gland (18-25mm)

## 4 Ethernet versions

### SGH4L0000MV-MMQ

SGH4L inline male  
**Outer contact modules :**  
 4 Ethernet lines  
**Central insert :**  
 Blank  
 M40 reduced cable gland (15-23mm)



### SGH4L12GCMV-MMP

SGH4L inline male  
**Outer contact modules :**  
 4 Ethernet lines  
**Central insert :**  
 12 signal contacts  
 M40 normal cable gland (19-28mm)



### SGH4L3P16MV-MMP

SGH4L inline male  
**Outer contact modules :**  
 4 Ethernet lines  
**Central insert :**  
 Power contacts 2p+E 16Amp / 2p 3w 23Amp  
 M40 normal cable gland (19-28mm)



### SGH4L5P16MV-MMR

SGH4L inline male  
**Outer contact modules :**  
 4 Ethernet lines  
**Central insert :**  
 Power contacts 3p+N+E 16Amp / 4p 5w 23Amp  
 M40 oversized cable gland (22-32mm)



### SGH4L3P32MV-MMR

SGH4L inline male  
**Outer contact modules :**  
 4 Ethernet lines  
**Central insert :**  
 Power contacts 2p+E 32Amp / 2p 3w 30Amp  
 M40 oversized cable gland (22-32mm)



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