



GM

MODULAR BAYONET CONNECTORS

Flexible solution for power, signals and
data transmission in harsh environment



Radiall ™

 VanSystem

About Us



Radiall

Since 1952, Radiall Sa have been enabling the future through collaboration with our customers. The results are a range of innovative and award-winning products that customers trust for unrivaled repeatability and performance.

Radiall Sa are a global company with facilities around the world that specializes in manufacturing the highest quality interconnect components to support the most demanding applications.

At Radiall, you can rely on us to be the industry's global market leader.

VanSystem

VanSystem is a company founded in Lombardy - Italy, which has been operating since 1985 in the industrial market. Since 2015 VanSystem is a Radiall company.

Besides connectors with screw or bayonet coupling complying with the Mil-DTL-5015 standard, VanSystem designs and manufactures non-standard products for special applications. One of VanSystem's strong points is an agile and dynamic organizational structure which enables direct and constant interaction with customers in order to meet all their requirements and build solid, long-term partnerships. The VanSystem team's professionalism, skill and commitment are at your service to help you achieve the solution you are looking for.

VanSystem's Quality System is qualified according to ISO 9001:2015 and ISO/TS 22163:2017 IRIS Certification™ rules:2017 (International Railway Industry Standard).



GM Connectors - Introduction

Modular Bayonet Connectors



GM

Modular Connectors:

GM connectors are designed for accepting modules for many different applications: Ethernet and Data Transmission, Coaxial connections, Fibre optics, Power cables, Signals up to 14 wires. Each module is pneumatically sealed in its housing (the connector is suitable for pressurized cabin). Plastic hard insert offers positive module rear release retention.

Features:

- Bayonet coupling system, directly derived from the reliable CVBS series
- 5 keyed guiding system, mechanical coding, variable combined polarization system
- High grade efficiency shielding for each module's EMI/RFI protection
- Audible, visible and tactile mating. One quarter turn lock for coupling
- Comply all requirements of transit applications
- IP67 rating (according to EN 60529)
- Rubber coated coupling nut offers damping protection against mechanical shock



GMM

Power, Signal and Data transmission modules:

GMM modules are designed for many different applications:

- Ethernet and data transmission (Cat. 7A Tested according to Trenitalia 376575, Cat. 7, 6A, 6, 5E, 5, MVB, RS485, WTB)
- Coaxial connections (RG cables, application Wi-Fi 2.4GHz & 5 GHz, GSMR, GPS, WLAN)
- Fibre optics (Accepted optical contacts SC type, 2/4 Expanded Beam)
- Power connection, signals up to 14 wires

High level of performance:

- EMI protection, each module is shielded alone with grounding finger
- Up to cat. 7A Ethernet data transmission
- Each module is pneumatically sealed and installed in the shell

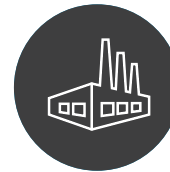
GM Connectors - Introduction

Modular Bayonet Connectors

GM series is a flexible connection solution for harsh environment application such as Rolling Stock: the insulating materials are in compliance with EN45545-2, the shock-vibrations tests (EN 61373) classified category 2 bogie mounted.

APPLICATIONS:

- Railway Equipment: passenger control, display, internet connection, networking, light control, diagnostic support for brakes, motors and doors
- Energy: power distribution, utilities, mobile generators, loadbanks, back-up power systems
- Naval: Military Field Power
- Industrial: motor controls, automation installation



FEATURES & BENEFITS:

Robust Connection

- Fully protected connectors: no risk to damage the modules thanks the robust shell
- Heavy duty rubber covered coupling nut
- Secure connectors suitable with polarizations to prevent un-correct coupling

Easy installation

- Fast and reliable coupling
- Simplified module fixation thanks mechanical clips
- Wide range of backshell and accessories for fastening cable/conduit fixation: single cable relief, heat shrink, metric treaded.

Suitable for harsh environments (adapted for outdoor use)

- Waterproof connection
- Dust proof
- Corrosion resistant

High level of performance

- EMI protection, each modules are shielded alone with grounding finger
- Up to cat. 7A Ethernet data transmission
- Power modular connection from 7,5A to 200A
- Coax cable of many type up to RG217
- Optical fibres with Expanded Beam system or optical SC contacts



GM Connectors - Introduction

Modular Bayonet Connectors

TECHNICAL DETAILS:

- Directly derived from the reliable CVBS series
- 5 keyed guiding system
- Mechanical coding – variable combined polarization system (available for 4 and 7 modules only)
- Audible, visible and tactile mating.
- One quarter turn lock for coupling
- Optical, coax, combined data and power modules available.
- Comply all requirements of transit applications.
- RoHS complying material & finish.
- Rubber coated coupling nut offers damping protection against mechanical shock.
- Available with back-shells expressly designed for single or double headed interconnection between vehicles.

Contacts type	Electrical crimp contacts, Expanded Beam connectors, SC connectors. Electrical Contacts: Copper alloy / Silver or Gold plated
Insert module materials	Rubber inserts or Thermoplastics resin according EN45545-2
Module shell	Aluminum alloy
IP protection degree	IP67 when mated
Rated temperature	-55°C ÷ +125 °C
Shell finishes	F7 Black epoxy varnish (<i>RoHS compliance</i>) (not conductive)
	F16 CCF - Black passivation (<i>RoHS compliance</i>) (conductive)
	F26 Hard anodization (<i>RoHS compliance</i>) (not conductive)
Corrosion resistant	500h (F7 shell finishes)
	500h (F16 shell finishes)
	1000h (F26 shell finishes)

MECHANICAL CHARACTERISTICS

Coupling mechanism	Reverse Bayonet Connector protected by a stainless steel stud
Mating endurance (IEC 61300-2-2)	500 mating cycles minimum (for use up to 2000 mating cycles, consult our commercial office)
Shock and vibrations tests (EN 61373)	Category 2 bogie mounted



GM Connectors - Part number explanation

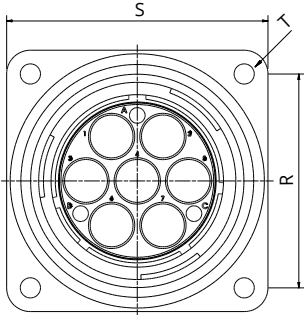


P/N Sample: GM 6RM20 24A1 F7 G S

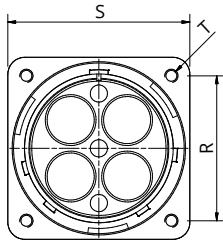
GM	Series Code	GM	Modular Connector shell series
6	Shell Type	0	Front mounting receptacle connector
		3	Rear mounting receptacle connector
		6	Plug connector for straight backshell
		8	Plug connector with 90° elbow
RM20	Backshell Class	-	Without backshell
		A	Backshell without rear thread
		RMxx	Backshell with internal metric thread
		RPxx	Backshell for rubber hose
		SMxx	Backshell with internal strain relief and metric thread
		SPxx	Backshell with internal strain relief for rubber hose
		RLMxx	Backshell for double headed jumper and metric thread
		RLPxx	Backshell for double headed jumper and for rubber hose
		ACF	Backshell with MS 3057...C type cable-clamp
24A1	Size and module number	24A1	Size 24 for 1 module
		40A4	Size 40 for 4 modules
		48A7	Size 48 for 7 modules
F7	Shell finish	F7	Black epoxy varnish (<i>RoHS compliance</i>)
		F16	CCF - Black passivation (<i>RoHS compliance</i>) - conductive
		F26	Hard anodization (<i>RoHS compliance</i>)
G	Panel Gasket	-	Without gasket
		G	Supplied with panel gasket
		G2	Supplied with shielded panel gasket
S	Modification Code	A	Supplied with modules (Consult our sales office)
		S	Modification code (Consult our sales office)

GM Connectors - Receptacle connector

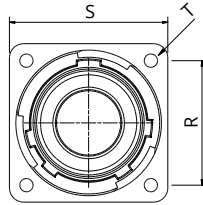
Shell type 0/3



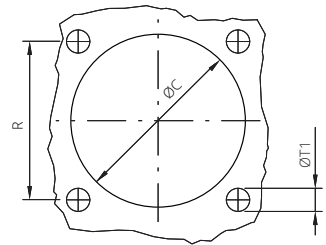
Size 48 and module number A7



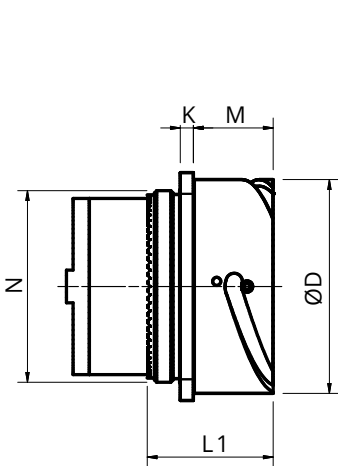
Size 40 and module number A4



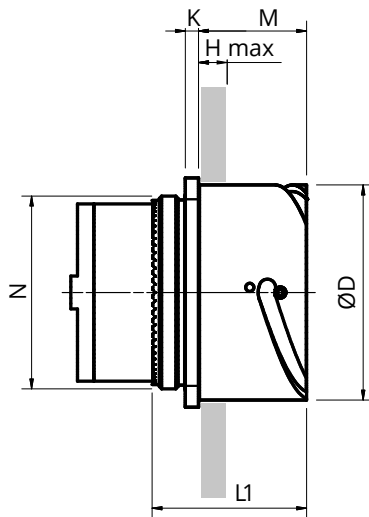
Size 24 and module number A1



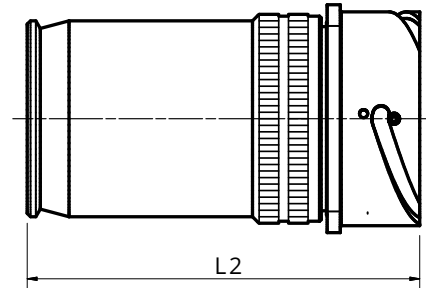
Panel cut out



0 Shell type



3 Shell type



A Backshell class A without rear thread

Shell type 0 front mounting

Size & modules number	ØD +0/-0.15	N Thread	S ±0.3	R ±0.1	ØC ±0.2	T	ØT1 Through holes	K ±0.2	M ±0.2	L1 max.	L2 max.
24A1	40.9	1"3/8-18 UNEF	44.5	34.9	36	Ø3.7	3.9	4	20.3	35.9	122.1
40A4	65.5	2"5/16-16 UN	69.8	55.6	61	Ø4.4	4.5	4	22.3	37.9	124
48A7	84	M74X1.5	110	90	76	Ø8.5	9	8	45	120	120

Shell type 3 rear mounting

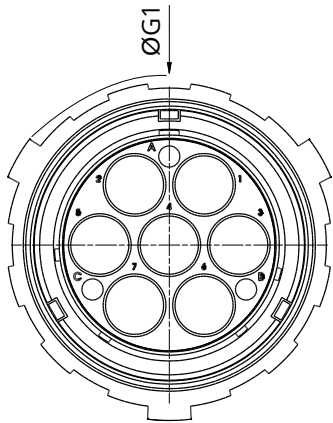
Size & modules number	ØD +0/-0.15	N Thread	S ±0.3	R ±0.1	ØC ±0.2	T	ØT1 Threaded holes	K ±0.2	M ±0.2	H max.	L1 max.	L2 max.
24A1	40.9	1"3/8-18 UNEF	44.5	34.9	41.8	M4	4.5	4	23.4	6.85	38.8	125
40A4	65.5	2"5/16-16 UN	69.8	55.6	66.4	M5	5.5	4	24.45	7.5	38.9	125
48A7	84	M74X1.5	110	90	91.8	M8	9*	8	45	10	120	120

*Through holes

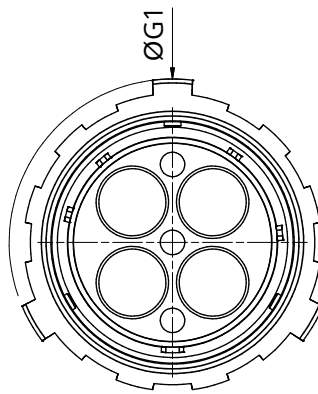
Dimensions in mm

GM Connectors - Plug connector

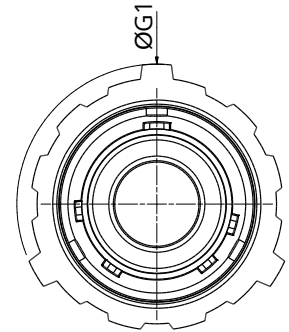
Shell type 6



Size 48 and module n° A7



Size 40 and module n° A4



Size 24 and module n° A1

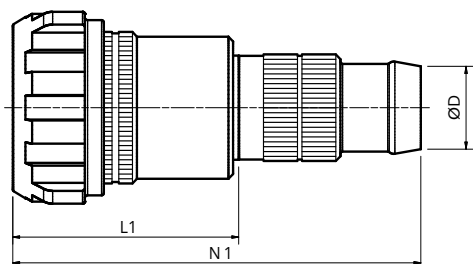
RM20

Backshell
Class

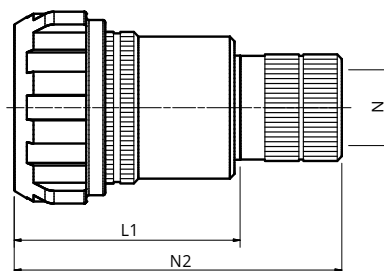
RMxx	Backshell and adapter with grommet and metric thread
RPxx	Backshell , grommet and adapter for rubber hose
SMxx	Backshell, internal strain relief, adapter with grommet and metric thread
SPxx	Backshell, internal strain relief, grommet and adapter for rubber hose
RLMxx	Backshell for double headed jumper, adapter with grommet and metric thread
RLPxx	Backshell for double headed jumper, grommet and adapter for rubber hose
ACF	Backshell with MS 3057...C type cable-clamp

GM Connectors - Plug connector

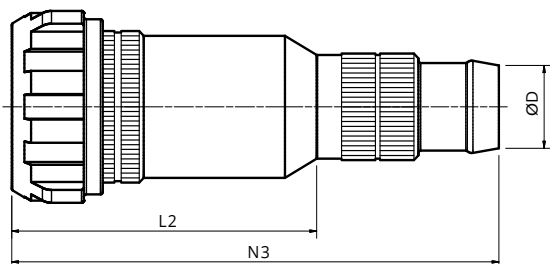
Shell type 6



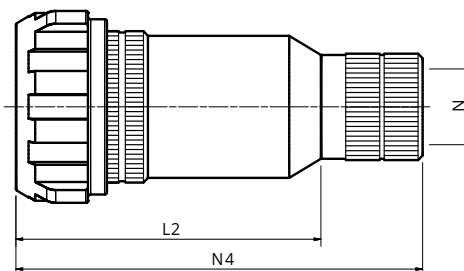
Backshell class RP



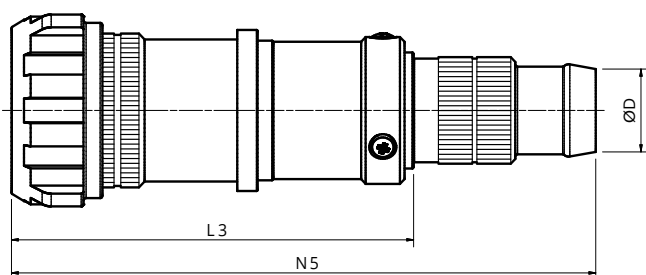
Backshell class RM



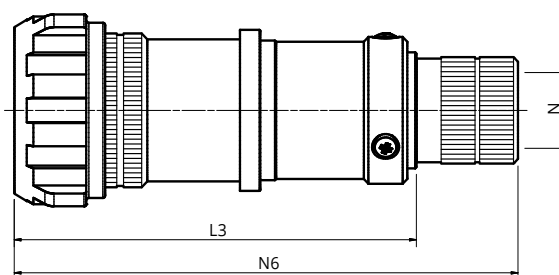
Backshell class SP



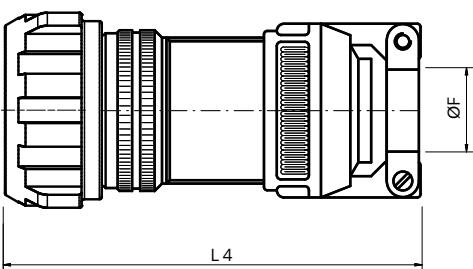
Backshell class SM



Backshell class RLP



Backshell class RLM



Backshell class ACF

Size & modules n°	ØG1 max.	L1 max.	N1 ±0.5	N2 ±0.5	L2 max.	N3 ±0.5	N4 ±0.5	L3 max.	N5 ±0.5	N6 ±0.5	L4 max.	N thread	ØD max.	ØF min/max
24A1	60.3	n.a.	130	147	n.a.	105	169	176	154	218	92.5	M20*	**	15.5/23.8
40A4	88.3	105	183	154	140	218	182	183	261	225	112	M32*	**	30/41.3
48A7	109.3	151	223	187	171	238	208	208	289	233	215	M40*	**	32/41

* Other Metric thread on request

** ØD max. according to the conduit type.

Dimensions in mm

GM Connectors - Connector

Shell finishes: black varnish



Receptacle connector (for shell type module 1)

Order Number	Short Description	Shell Type	Size	N° module	Accessories	Backshell Type	Shell Finishes
VS366101	GM 0 24A1 F7 G	Front panel mounting	24	1	panel gasket	-	Black Varnish
VS366102	GM 0 40A4 F7 G	Front panel mounting	40	4	panel gasket	-	Black Varnish
VS366103	GM 0 48A7 F7 G	Front panel mounting	48	7	panel gasket	-	Black Varnish
VS366104*	GM 3 24A1 F7 G	Rear panel mounting	24	1	panel gasket	-	Black Varnish
VS366105	GM 3 40A4 F7 G	Rear panel mounting	40	4	panel gasket	-	Black Varnish
VS366106	GM 3 48A7 F7 G	Rear panel mounting	48	7	panel gasket	-	Black Varnish



Plug connector (for shell type module 6)

Order Number	Short Description	Shell Type	Size	N° module	Accessories	Backshell Type	Shell Finishes
VS366108	GM 6RM25 24A1 F7	Straight plug	24	1	-	M25 internal threaded	Black Varnish
VS366109	GM 6ACF 24A1 F7	Straight plug	24	1	-	with MS 3057...C type cable-clamp	Black Varnish
VS366111	GM 6RM32 40A4 F7	Straight plug	40	4	-	M32 internal threaded	Black Varnish
VS366112	GM 6ACF 40A4 F7	Straight plug	40	4	-	with MS 3057...C type cable-clamp	Black Varnish
VS366114	GM 6RM40 48A4 F7	Straight plug	48	7	-	M40 internal threaded	Black Varnish
VS366115	GM 6ACF 48A4 F7	Straight plug	48	7	-	with MS 3057...C type cable-clamp	Black Varnish

** On request

GM Connectors - Connector

Shell finishes: CCF - Black passivation (conductive)



Receptacle connector (for shell type module 1)

Order Number	Short Description	Shell Type	Size	N° module	Accessories	Backshell Type	Shell Finishes
VS366116	GM 0 24A1 F16 G2	Front panel mounting	24	1	panel gasket*	-	CCF-Black passivation*
VS366117	GM 0 40A4 F16 G2	Front panel mounting	40	4	panel gasket*	-	CCF-Black passivation*
VS366118*	GM 0 48A7 F16 G2	Front panel mounting	48	7	panel gasket*	-	CCF-Black passivation*
VS366119	GM 3 24A1 F16 G2	Rear panel mounting	24	1	panel gasket*	-	CCF-Black passivation*
VS366120	GM 3 40A4 F16 G2	Rear panel mounting	40	4	panel gasket*	-	CCF-Black passivation*
VS366121*	GM 3 48A7 F16 G2	Rear panel mounting	48	7	panel gasket*	-	CCF-Black passivation*

* conductive



Plug connector (for shell type module 6)

Order Number	Short Description	Shell Type	Size	N° module	Accessories	Backshell Type	Shell Finishes
VS366123	GM 6RM25 24A1 F16	Straight plug	24	1	-	M25 internal threaded	CCF-Black passivation*
VS366124	GM 6ACF 24A1 F16	Straight plug	24	1	-	with MS 3057...C type cable-clamp	CCF-Black passivation*
VS366126	GM 6RM32 40A4 F16	Straight plug	40	4	-	M32 internal threaded	CCF-Black passivation*
VS366127	GM 6ACF 40A4 F16	Straight plug	40	4	-	with MS 3057...C type cable-clamp	CCF-Black passivation*
VS366129	GM 6RM40 48A4 F16	Straight plug	48	7	-	M40 internal threaded	CCF-Black passivation*
VS366130	GM 6ACF 48A4 F16	Straight plug	48	7	-	with MS 3057...C type cable-clamp	CCF-Black passivation*

** On request

* conductive

GMM Modules - Introduction

Power, Signal and Data transmission modules



MODULE TYPE

Materials and finishes:

Shell Aluminum alloy – Electro-less nickel plated or thermoplastic version
 Contacts Copper alloy – Gold or silver plating over Nickel
 Insulator Thermoplastic /rubber fire resisting complies EN 45545-2 - NFPA 130 (ASTM E 162, ASTM E 662, BSS 7239)

Module type	Data Transmission Coaxial cables	N° Poles	Rated Current	Rated Voltage	Contact size	Wire section mm ²	AWG	Contact Type	Contact plated
C7	cat. 7A / 7 / 6A	2x4	-	-	-	-	23	crimp	gold
14Z8	cat. 6 / 5e	2x4	-	-	-	0,15 - 0,60	26 - 20	crimp	gold
14S2	cat. 5 / MVB / RS485	4	-	-	-	0,15 - 0,60	26 - 20	crimp	gold
14S9	WTB	2	-	-	-	0,6	20	crimp	gold
FOSC3	SC optical fiber	3	-	-	-	-	-	crimp	-
FOEB2	Expanded Beam SM / MM	2	-	-	-	-	-	crimp	-
FOEB4	Expanded Beam SM / MM	4	-	-	-	-	-	crimp	-
C8	RG58 / RG59 / RG179 / RG187	1	-	-	-	-	-	-	-
C4	RG59	1	-	-	-	-	-	-	-
C4R	Wi-Fi 2.4GHz & 5 GHz GSMR / GPS / WLAN	1	-	-	-	-	-	-	-
P4	-	1	80A	200V	4	-	4	crimp	silver*/ (gold)
P8	-	1	46A	200V	8	-	8	crimp	silver*/ (gold)
P3-13	-	2+PE	13A	200V	-	2,5	-	crimp	silver*/ (gold)
14S7	-	3	13A	500V	16	1,00 - 1,50	18 - 16	crimp	gold* / (silver)
14S5	-	5	13A	200V	16	1,00 - 1,50	18 - 16	crimp	gold* / (silver)
14S6	-	6	13A	200V	16	0,15 - 0,60	26 - 20	crimp	gold* / (silver)
14SA7	-	7	13A	200V	16	0,15 - 0,60	26 - 20	crimp	gold* / (silver)
14Z10	-	10	7,5A	200V	20	0,6	20	crimp	gold* / (silver)
14Z12	-	12	7,5A	200V	20	0,6	20	crimp	gold* / (silver)
14Z14	-	14	7,5A	200V	20	0,6	20	crimp	gold* / (silver)

Terminations for other section can be supplied on request.

* Standard contacts plating

GMM Modules - Part number explanation



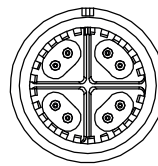
P/N Sample: GMM 6XE 14Z10P A09 N04

GMM	Series Code	GMM	Modular inserts series
6	Shell Type	1	Module for receptacle (shell class 0/3)
		6	Module for plug (shell class 6/8)
XE	Backshell Class	A	Short backshell (the module is supplied without EMI grounding finger)
		XA	Adapter for heat shrink tube for wire diameter 10,2mm
		GV	Adapter with shielding nut and cone for wire diameter 9,3mm
		XE	Adapter for crimping sleeve and heat shrink tube
		EII	Double spring adapter (strain relief & shielding)
		-	Without Backshell
		14Z10	Insert arrangement
14Z8	cat. 6 / 5e		
14S2	cat. 5 / MVB / RS485		
14S9	WTB		
FOESC3	SC optical fiber connectors		
FOEB2S	Expanded Beam, Single Mode, 2 channel connectors		
FOEB4S	Expanded Beam, Single Mode, 4 channel connectors		
FOEB2M	Expanded Beam, Multi Mode, 2 channel connectors		
FOEB4M	Expanded Beam, Multi Mode, 4 channel connectors		
C8	RG58 / RG59 / RG179 / RG187		
C4	RG59		
C4R	Wi-Fi 2.4GHz & 5 GHz / GSMR / GPS / WLAN		
P4	1 pole, 80A		
P8	1 pole, 46A		
13P3	3 poles, 13A		
14S7	3 poles, 13A		
14S5	5 poles, 13A		
14S6	6 poles, 13A		
14SA7	7 poles 13A		
14Z10	10 poles, 7,5A		
14Z12	12 poles, 7,5A		
14Z14	14 poles, 7,5A		
P	Contact gender	P	Pin insert
		S	Socket insert
A09	Cable diameter	A05	XE Module for cables up to Ø 5mm
		A06	XE Module for cables up to Ø 6mm
		A09	XE Module for cables up to Ø 9mm
		Axx	XA and GV Modules for not standard cable diameter
N04	Contact type	LC	Module supplied without contacts
		N01	Contacts for wire section 1 – 1,50mm ² , AWG 18-16 (14S module type)
		N02	Contacts for wire section 0,15 – 0,50mm ² , AWG 26-20 (14S module type)
		N03	Contacts for AWG 23 (C7 module type)
		N04	Contacts for wire section 0,60 mm ² , AWG 20 (14Z module type)
N05	Contacts for wire section 2,50 mm ² , (13P3 module type)		
Contact Plating	-	Gold Plated Contact for Data Module or Silver Plated Contact for Power Module	
	S	Silver Plated Contact for Data Module	
	D	Gold Plated Contact for Power Module	

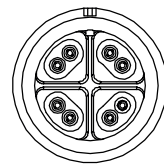
GMM Modules - C7 Module

Ethernet Cat 6A - Ethernet Cat 7 - Ethernet Cat 7A

- Match CAT 7A requirements.
- Tested according to Trenitalia 376575.
- Over-moulded contacts pairs at controlled impedance.
- Each pair is fully shielded from the adjacent to reduce the crosstalk.
- 2x4 contact termination AWG 23 (available AWG24 and AWG26 on request).
- Reduced components quantity makes easier and more reliable assembly.



Pin insert



Socket insert

Module 1 for receptacle connectors (shell type 0 / 3)

Order Number	Short Description	N° Poles	Ethernet	Contact Gender	Wire Section mm ²	AWG	Contact Type (size)	Contact plated
VS366131	GMM 1EII C7P N03	2x4	Cat. 6A - Cat. 7 - Cat. 7A	Pin	-	23	crimp	gold
VS366132*	GMM 1GV C7P N03	2x4	Cat. 6A	Pin	-	23	crimp	gold

Module 6 for plug connectors (shell type 6 / 8)

Order Number	Short Description	N° Poles	Ethernet	Contact Gender	Wire Section mm ²	AWG	Contact Type (size)	Contact plated
VS366133	GMM 6EII C7S N03	2x4	Cat. 6A - Cat. 7 - Cat. 7A	Socket	-	23	crimp	gold
VS366134*	GMM 6GV C7S N03	2x4	Cat. 6A	Socket	-	23	crimp	gold

* on developing

Terminations for other section can be supplied on request

Backshell Class	GV	Adapter with shielding nut and cone for wire diameter 9,3mm
EII	EII	Double spring adapter (strain relief & shielding)

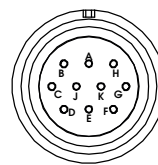
Materials and finishes:

Shell	Aluminum alloy – Electro-less nickel plated
Contacts	Copper alloy – Gold plating over Nickel
Insulator	Controlled impedance thermoplastic resin

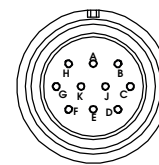
GMM Modules - 14Z8 Module

Ethernet Cat 6 - Ethernet Cat 5E

- 2x4 contact termination AWG 20
- High grade efficiency shielding for each module's EMI/RFI protection



Socket insert



Pin insert

Module 1 for receptacle connectors (shell type 0 / 3)

Order Number	Short Description	N° Poles	Ethernet	Contact Gender	Wire Section mm ²	AWG	Contact Type (size)	Contact plated
VS366135	GMM 1EII 14Z8P N04	2x4	Cat. 6	Pin	0,6	20	crimp	gold
VS366136	GMM 1GV 14Z8P N04	2x4	Cat. 5E	Pin	0,6	20	crimp	gold
VS366137*	GMM 1EII 14Z8S N04	2x4	Cat. 6	Socket	0,6	20	crimp	gold
VS366138*	GMM 1GV 14Z8S N04	2x4	Cat. 5E	Socket	0,6	20	crimp	gold

Module 6 for plug connectors (shell type 6 / 8)

Order Number	Short Description	N° Poles	Ethernet	Contact Gender	Wire Section mm ²	AWG	Contact Type (size)	Contact plated
VS366139*	GMM 6EII 14Z8P N04	2x4	Cat. 6	Pin	0,6	20	crimp	gold
VS366140*	GMM 6GV 14Z8P N04	2x4	Cat. 5E	Pin	0,6	20	crimp	gold
VS366141	GMM 6EII 14Z8S N04	2x4	Cat. 6	Socket	0,6	20	crimp	gold
VS366142	GMM 6GV 14Z8S N04	2x4	Cat. 5E	Socket	0,6	20	crimp	gold

* on developing

Backshell Class	GV	Adapter with shielding nut and cone for wire diameter 9,3mm
Backshell Class	EII	Double spring adapter (strain relief & shielding)

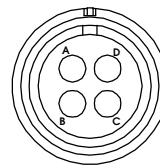
Materials and finishes:

Shell	Aluminum alloy – Electro-less nickel plated
Contacts	Copper alloy – Gold plating over Nickel
Insulator	Fire resisting rubber compound complies EN 45545-2 - NFPA 130 (ASTM E 162, ASTM E 662, BSS 7239)

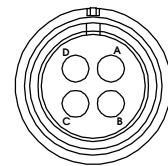
GMM Modules - 14S2 Module

Ethernet Cat 5 - MVB - RS485 4 wire

- 4 contact termination
- High grade efficiency shielding for each module's EMI/RFI protection



Socket insert



Pin insert

Module 1 for receptacle connectors (shell type 0 / 3)

Order Number	Short Description	N° Poles	Rated Current	Rated Voltage	Contact Gender	Wire Section mm ²	AWG	Contact Type (size)	Contact plated
VS366143	GMM 1EII 14S2P N02	4	13A	200V	Pin	0,15±0,60	26 - 20	crimp	gold
VS366144	GMM 1GV 14S2P N02	4	13A	200V	Pin	0,15±0,60	26 - 20	crimp	gold
VS366145*	GMM 1EII 14S2S N02	4	13A	200V	Socket	0,15±0,60	26 - 20	crimp	gold
VS366146*	GMM 1GV 14S2S N02	4	13A	200V	Socket	0,15±0,60	26 - 20	crimp	gold
VS366237	GMM 1XE 14S2P A09 N02	4	13A	200V	Socket	0,15±0,60	26 - 20	crimp	gold

Module 6 for plug connectors (shell type 6 / 8)

Order Number	Short Description	N° Poles	Rated Current	Rated Voltage	Contact Gender	Wire Section mm ²	AWG	Contact Type (size)	Contact plated
VS366147*	GMM 6EII 14S2P N02	4	13A	200V	Pin	0,15±0,60	26 - 20	crimp	gold
VS366148*	GMM 6GV 14S2P N02	4	13A	200V	Pin	0,15±0,60	26 - 20	crimp	gold
VS366149	GMM 6EII 14S2S N02	4	13A	200V	Socket	0,15±0,60	26 - 20	crimp	gold
VS366150	GMM 6GV 14S2S N02	4	13A	200V	Socket	0,15±0,60	26 - 20	crimp	gold
VS366238	GMM 6XE 14S2S A09 N02								

* on developing

Terminations for other section can be supplied on request

GV	GV	Adapter with shielding nut and cone for wire diameter 9,3mm
EII	EII	Double spring adapter (strain relief & shielding)

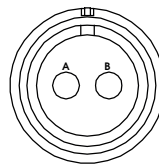
Materials and finishes:

Shell	Aluminum alloy – Electro-less nickel plated
Contacts	Copper alloy – Gold plating over Nickel
Insulator	Fire resisting rubber compound complies EN 45545-2 - NFPA 130 (ASTM E 162, ASTM E 662, BSS 7239)

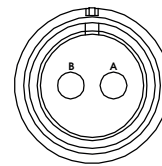
GMM Modules - 14S9 Module

WTB

- 2 contact termination AWG 20
- High grade efficiency shielding for each module's EMI/RFI protection
- Service rating A = Operating Voltage (AC) 500Vac – (DC) 700Vcc



Socket insert



Pin insert

Module 1 for receptacle connectors (shell type 0 / 3)

Order Number	Short Description	N° Poles	Rated Current	Rated Voltage	Contact Gender	Wire Section mm ²	AWG	Contact Type (size)	Contact plated
VS366151	GMM 1A 14S9P N02	2	13A	500Vca	Pin	0,15÷0,60	26 - 20	crimp	gold
VS366152	GMM 1GV 14S9P N02	2	13A	500Vca	Pin	0,15÷0,60	26 - 20	crimp	gold
VS366153	GMM 1XE 14S9P A09 N02	2	13A	500Vca	Pin	0,15÷0,60	26 - 20	crimp	gold
VS366154*	GMM 1A 14S9S N02	2	13A	500Vca	Socket	0,15÷0,60	26 - 20	crimp	gold
VS366155*	GMM 1GV 14S9S N02	2	13A	500Vca	Socket	0,15÷0,60	26 - 20	crimp	gold
VS366156*	GMM 1XE 14S9S A09 N02	2	13A	500Vca	Socket	0,15÷0,60	26 - 20	crimp	gold

Module 6 for plug connectors (shell type 6 / 8)

Order Number	Short Description	N° Poles	Rated Current	Rated Voltage	Contact Gender	Wire Section mm ²	AWG	Contact Type (size)	Contact plated
VS366157*	GMM 6A 14S9P N02	2	13A	500Vca	Pin	0,15÷0,60	26 - 20	crimp	gold
VS366158*	GMM 6GV 14S9P N02	2	13A	500Vca	Pin	0,15÷0,60	26 - 20	crimp	gold
VS366159*	GMM 6XE 14S9P A09 N02	2	13A	500Vca	Pin	0,15÷0,60	26 - 20	crimp	gold
VS366160	GMM 6A 14S9S N02	2	13A	500Vca	Socket	0,15÷0,60	26 - 20	crimp	gold
VS366161	GMM 6GV 14S9S N02	2	13A	500Vca	Socket	0,15÷0,60	26 - 20	crimp	gold
VS366162	GMM 6XE 14S9S A09 N02	2	13A	500Vca	Socket	0,15÷0,60	26 - 20	crimp	gold

* on developing

Terminations for other section can be supplied on request

GV	GV	Adapter with shielding nut and cone for wire diameter 9,3mm
A	Backshell Class A	Short backshell (the module is supplied without EMI grounding finger)
XE...	XE...A09	Adapter for crimping sleeve and heat shrink tube for cables up to Ø 9 mm (Ø 5 mm Ø 6 mm on request)

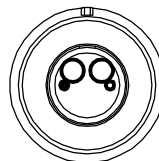
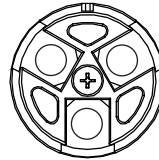
Materials and finishes:

Shell	Aluminum alloy – Electro-less nickel plated
Contacts	Copper alloy – Gold plating over Nickel
Insulator	Fire resisting rubber compound complies EN 45545-2 - NFPA 130 (ASTM E 162, ASTM E 662, BSS 7239)

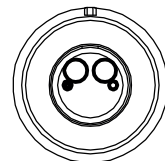
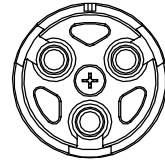
GMM Modules - FO Optical Module

FO3 SC connectors - FOB Expanded Beam connectors

- 3 SC connectors
- Expanded Beam connectors, Single Mode (SM) / Multimode (MM) 2 Channel or 4 Channel



Socket insert



Pin insert

Module 1 for receptacle connectors (shell type 0 / 3)

Order Number	Short Description	N° Poles	Module for connectors type	Channel	Mode
VS366163	GMM 1 FOSC3P LC	3	SC connectors**	-	-
VS366164*	GMM 1 FOEB2S LC	2	EB Expanded Beam	2	Single Mode
VS366165*	GMM 1 FOEB2M LC	2	EB Expanded Beam	2	Multi Mode
VS366166*	GMM 1 FOEB4S LC	4	EB Expanded Beam	4	Single Mode
VS366167*	GMM 1 FOEB4M LC	4	EB Expanded Beam	4	Multi Mode

* on developing

** SC Connectors to be purchased separately

Module 6 for plug connectors (shell type 6 / 8)

Order Number	Short Description	N° Poles	Module for connectors type	Channel	Mode
VS366168	GMM 6 FOSC3S LC	3	SC connectors**	-	-
VS366169*	GMM 6 FOEB2S LC	2	EB Expanded Beam	2	Single Mode
VS366170*	GMM 6 FOEB2M LC	2	EB Expanded Beam	2	Multi Mode
VS366171*	GMM 6 FOEB4S LC	4	EB Expanded Beam	4	Single Mode
VS366172*	GMM 6 FOEB4M LC	4	EB Expanded Beam	4	Multi Mode

* on developing

** SC Connectors to be purchased separately

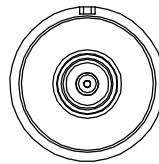
Materials and finishes:

Shell Thermoplastic shell
 Insulator Thermoplastic fire resisting complies EN 45545-2 - NFPA 130 (ASTM E 162, ASTM E 662, BSS 7239)

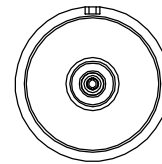
GMM Modules - C Coax Module

C8 for CC485-8 contacts - C4 for CC485-4 contacts - C4R for CC RP contacts

- Size 8 used with wire RG58 / RG59 / RG179 / RG187
- Size 4 for RG59
- Size 4 for Wi-Fi 2.4GHz & 5 GHz / GSMR / GPS / WLAN
- C Coax Module is supplied without contacts



Socket insert



Pin insert

Module 1 for receptacle connectors (shell type 0 / 3)

Order Number	Short Description	N° Poles	Module for connectors type
VS366173*	GMM 1 C8P LC	1	RG58 / RG59 / RG179 / RG187
VS366174*	GMM 1 C4P LC	1	RG59
VS366175*	GMM 1 C4RP LC	1	Wi-Fi 2.4GHz & 5 GHz / GSMR / GPS / WLAN

* on developing

Consult our Commercial Office for Coaxial Contacts

Module 6 for plug connectors (shell type 6 / 8)

Order Number	Short Description	N° Poles	Module for connectors type
VS366176*	GMM 6 C8S LC	1	RG58 / RG59 / RG179 / RG187
VS366177*	GMM 6 C4S LC	1	RG59
VS366178*	GMM 6 C4RS LC	1	Wi-Fi 2.4GHz & 5 GHz / GSMR / GPS / WLAN

* on developing

Consult our Commercial Office for Coaxial Contacts

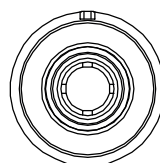
Materials and finishes:

Shell Thermoplastic shell
 Insulator Thermoplastic fire resisting complies EN 45545-2 - NFPA 130 (ASTM E 162, ASTM E 662, BSS 7239)

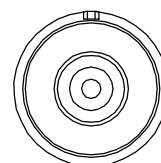
GMM Modules - P Power Module

Contacts size 8 - for contacts size 4

- 1 pole
- Thermoplastic shell



Socket insert



Pin insert

Module 1 for receptacle connectors (shell type 0 / 3)

Order Number	Short Description	N° Poles	Rated Current	Rated Voltage	Contact Gender	Wire Section mm ²	AWG	Contact Type (size)	Contact plated
VS366179*	GMM 1 P4P N06	1	80A	900V	Pin	22	4	crimp (4)	silver
VS366180*	GMM 1 P8P N07	1	46A	1.250V	Pin	6	10	crimp (8)	silver
VS366181*	GMM 1 P4S N06	1	80A	900V	Socket	22	4	crimp (4)	silver
VS366182*	GMM 1 P8S N07	1	46A	1.250V	Socket	6	10	crimp (8)	silver

* on developing

Terminations for other section can be supplied on request

Module 6 for plug connectors (shell type 6 / 8)

Order Number	Short Description	N° Poles	Rated Current	Rated Voltage	Contact Gender	Wire Section mm ²	AWG	Contact Type (size)	Contact plated
VS366183*	GMM 6 P4P N06	1	80A	900V	Pin	22	4	crimp (4)	silver
VS366184*	GMM 6 P8P N07	1	46A	1.250V	Pin	6	10	crimp (8)	silver
VS366185*	GMM 6 P4S N06	1	80A	900V	Socket	22	4	crimp (4)	silver
VS366186*	GMM 6 P8S N07	1	46A	1.250V	Socket	6	10	crimp (8)	silver

* on developing

Terminations for other section can be supplied on request

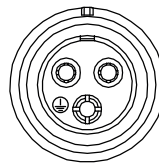
Materials and finishes:

Shell	Thermoplastic shell
Contacts	Copper alloy – Silver plating over Nickel (Gold plating available on request)
Insulator	Thermoplastic fire resisting complies EN 45545-2 - NFPA 130 (ASTM E 162, ASTM E 662, BSS 7239)

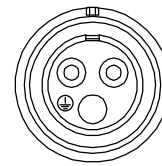
GMM Modules - 13P3 Power Module

With Ground Contact

- 2 poles + ground contact
- Equipped with first-mate last-break (FMLB) Pin grounding contact
- Service rating I = Operating Voltage (AC) 200 Vac - (DC) 250 Vcc



Socket insert



Pin insert

Module 1 for receptacle connectors (shell type 0 / 3)

Order Number	Short Description	N° Poles	Rated Current	Rated Voltage	Contact Gender	Wire Section mm ²	AWG	Contact Type (size)	Contact plated
VS366231	GMM 1A 13P3P N05	2+PE	13A	200Vca	Pin	2,5	-	crimp	silver
VS366188	GMM 1EII 13P3P N05	2+PE	13A	200Vca	Pin	2,5	-	crimp	silver
VS366189*	GMM 1A 13P3S N05	2+PE	13A	200Vca	Socket	2,5	-	crimp	silver
VS366190*	GMM 1EII 13P3S N05	2+PE	13A	200Vca	Socket	2,5	-	crimp	silver

* on developing

Terminations for other section can be supplied on request

Module 6 for plug connectors (shell type 6 / 8)

Order Number	Short Description	N° Poles	Rated Current	Rated Voltage	Contact Gender	Wire Section mm ²	AWG	Contact Type (size)	Contact plated
VS366191*	GMM 6A 13P3P N05	2+PE	13A	200Vca	Pin	2,5	-	crimp	silver
VS366192*	GMM 6EII 13P3P N05	2+PE	13A	200Vca	Pin	2,5	-	crimp	silver
VS366232	GMM 6A 13P3S N05	2+PE	13A	200Vca	Socket	2,5	-	crimp	silver
VS366194	GMM 6EII 13P3S N05	2+PE	13A	200Vca	Socket	2,5	-	crimp	silver

* on developing

Terminations for other section can be supplied on request

Backshell Class	Description
A	Short backshell (the module is supplied without EMI grounding finger)
EII	Double spring adapter (strain relief & shielding)

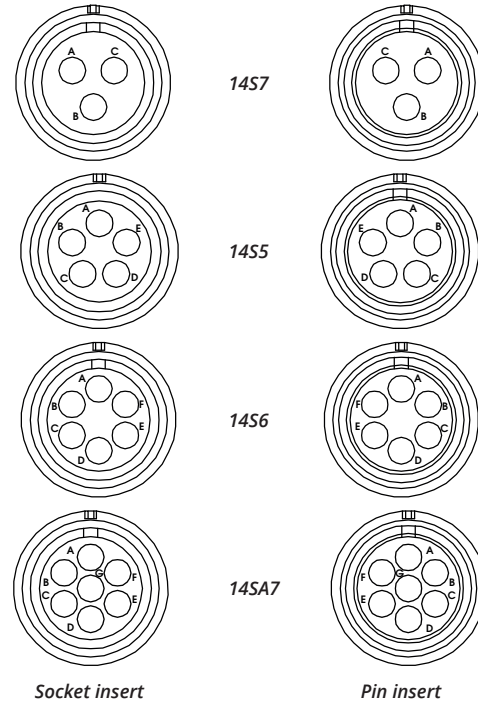
Materials and finishes:

Shell	Aluminum alloy – Electro-less nickel plated
Contacts	Copper alloy – Silver plating over Nickel (Gold plating available on request)
Insulator	Fire resisting rubber compound complies EN 45545-2 - NFPA 130 (ASTM E 162, ASTM E 662, BSS 7239)

GMM Modules - Multifunctional Modules

13A – contact size 16

- Up to 7 poles
- High grade efficiency shielding for each module's EMI/RFI protection
- XA = Adapter for heat shrink tube for wire diameter 10,2mm



Module 1 for receptacle connectors (shell type 0 / 3)

Order Number	Short Description	N° Poles	Rated Current	Rated Voltage	Contact Gender	Wire Section mm ²	AWG	Contact Type (size)	Contact plated
VS366195	GMM 1XA 14S7P N01	3	13A	500V	Pin	1,00÷1,50	18 - 16	crimp	gold
VS366196	GMM 1XA 14S5P N01	5	13A	200V	Pin	1,00÷1,50	18 - 16	crimp	gold
VS366197	GMM 1XA 14S6P N02	6	13A	200V	Pin	0,15÷0,60	26 - 20	crimp	gold
VS366198	GMM 1XA 14SA7P N02	7	13A	200V	Pin	0,15÷0,60	26 - 20	crimp	gold
VS366199*	GMM 1XA 14S7S N01	3	13A	500V	Socket	1,00÷1,50	18 - 16	crimp	gold
VS366200*	GMM 1XA 14S5S N01	5	13A	200V	Socket	1,00÷1,50	18 - 16	crimp	gold
VS366201*	GMM 1XA 14S6S N02	6	13A	200V	Socket	0,15÷0,60	26 - 20	crimp	gold
VS366202*	GMM 1XA 14SA7S N02	7	13A	200V	Socket	0,15÷0,60	26 - 20	crimp	gold

* on developing

Terminations for other section can be supplied on request

Module 6 for plug connectors (shell type 6 / 8)

Order Number	Short Description	N° Poles	Rated Current	Rated Voltage	Contact Gender	Wire Section mm ²	AWG	Contact Type (size)	Contact plated
VS366203*	GMM 6XA 14S7P N01	3	13A	500V	Pin	1,00÷1,50	18 - 16	crimp	gold
VS366204*	GMM 6XA 14S5P N01	5	13A	200V	Pin	1,00÷1,50	18 - 16	crimp	gold
VS366205*	GMM 6XA 14S6P N02	6	13A	200V	Pin	0,15÷0,60	26 - 20	crimp	gold
VS366206*	GMM 6XA 14SA7P N02	7	13A	200V	Pin	0,15÷0,60	26 - 20	crimp	gold
VS366207	GMM 6XA 14S7S N01	3	13A	500V	Socket	1,00÷1,50	18 - 16	crimp	gold
VS366208	GMM 6XA 14S5S N01	5	13A	200V	Socket	1,00÷1,50	18 - 16	crimp	gold
VS366209	GMM 6XA 14S6S N02	6	13A	200V	Socket	0,15÷0,60	26 - 20	crimp	gold
VS366210	GMM 6XA 14SA7S N02	7	13A	200V	Socket	0,15÷0,60	26 - 20	crimp	gold

* on developing

Terminations for other section can be supplied on request

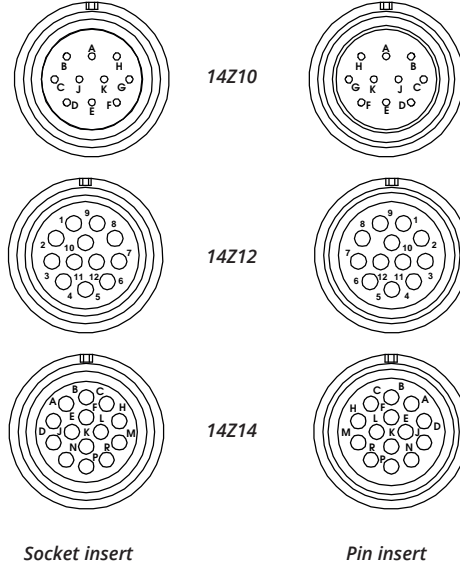
Materials and finishes:

Shell	Aluminum alloy – Electro-less nickel plated
Contacts	Copper alloy – Gold plating over Nickel (Silver plating available on request)
Insulator	Fire resisting rubber compound complies EN 45545-2 - NFPA 130 (ASTM E 162, ASTM E 662, BSS 7239)

GMM Modules - Multifunctional Modules

7,5A – contact size 20

- Up to 14 poles
- High grade efficiency shielding for each module's EMI/RFI protection
- XE .. A09 Adapter for crimping sleeve and heat shrink tube for cables up to Ø 9mm (Ø 5mm - Ø 6mm on request)
- A = short backshell



Module 1 for receptacle connectors (shell type 0 / 3)

Order Number	Short Description	N° Poles	Rated Current	Rated Voltage	Contact Gender	Wire Section mm ²	AWG	Contact Type (size)	Contact plated
VS366211	GMM 1XE 14Z10P A09 N04	10	7,5A	200V	Pin	0,6	20	crimp	gold
VS366212	GMM 1XE 14Z12P A09 N04	12	7,5A	200V	Pin	0,6	20	crimp	gold
VS366213	GMM 1A 14Z14P N04	14	7,5A	200V	Pin	0,6	20	crimp	gold
VS366214	GMM 1XE 14Z14P A09 N04	14	7,5A	200V	Pin	0,6	20	crimp	gold
VS366215*	GMM 1XE 14Z10S A09 N04	10	7,5A	200V	Socket	0,6	20	crimp	gold
VS366216*	GMM 1XE 14Z12S A09 N04	12	7,5A	200V	Socket	0,6	20	crimp	gold
VS366217*	GMM 1A 14Z14S N04	14	7,5A	200V	Socket	0,6	20	crimp	gold
VS366218*	GMM 1XE 14Z14S A09 N04	14	7,5A	200V	Socket	0,6	20	crimp	gold

* on developing

Terminations for other section can be supplied on request

Module 6 for plug connectors (shell type 6 / 8)

Order Number	Short Description	N° Poles	Rated Current	Rated Voltage	Contact Gender	Wire Section mm ²	AWG	Contact Type (size)	Contact plated
VS366219*	GMM 6XE 14Z10P A09 N04	10	7,5A	200V	Pin	0,6	20	crimp	gold
VS366220*	GMM 6XE 14Z12P A09 N04	12	7,5A	200V	Pin	0,6	20	crimp	gold
VS366221*	GMM 6A 14Z14P N04	14	7,5A	200V	Pin	0,6	20	crimp	gold
VS366222*	GMM 6XE 14Z14P A09 N04	14	7,5A	200V	Pin	0,6	20	crimp	gold
VS366223	GMM 6XE 14Z10S A09 N04	10	7,5A	200V	Socket	0,6	20	crimp	gold
VS366224	GMM 6XE 14Z12S A09 N04	12	7,5A	200V	Socket	0,6	20	crimp	gold
VS366225	GMM 6A 14Z14S N04	14	7,5A	200V	Socket	0,6	20	crimp	gold
VS366226	GMM 6XE 14Z14S A09 N04	14	7,5A	200V	Socket	0,6	20	crimp	gold

* on developing

Terminations for other section can be supplied on request

Materials and finishes:

Shell	Aluminum alloy – Electro-less nickel plated
Contacts	Copper alloy – Gold plating over Nickel (Silver plating available on request)
Insulator	Fire resisting rubber compound complies EN 45545-2 - NFPA 130 (ASTM E 162, ASTM E 662, BSS 7239)

GMM Modules - Backshell class

GMM

6

XE

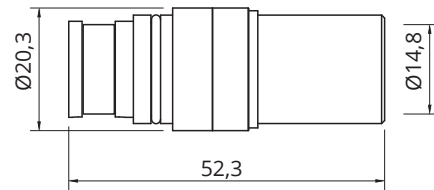
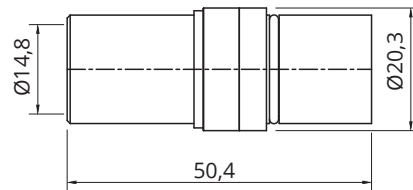
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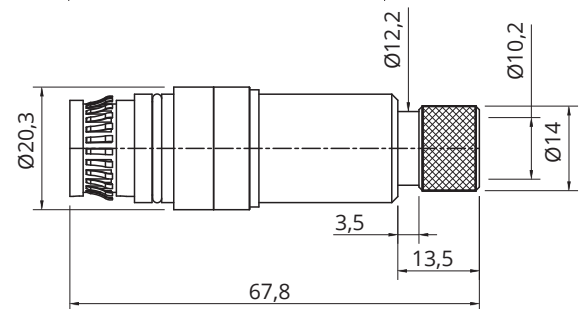
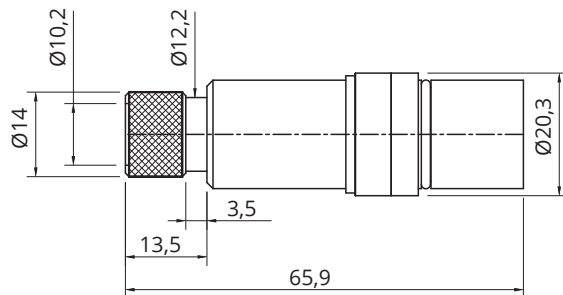
A09

N04

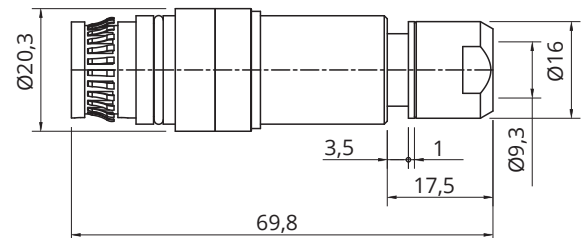
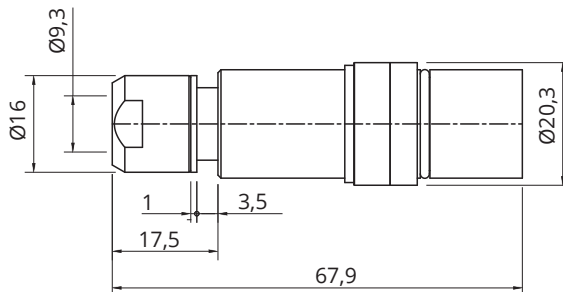
A



XA



GV



XE

Backshell Class

A	Short backshell (the module is supplied without EMI grounding finger)
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XA	Adapter for heat shrink tube for wire diameter 10,2mm
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GV	Adapter with shielding nut and cone for wire diameter 9,3mm
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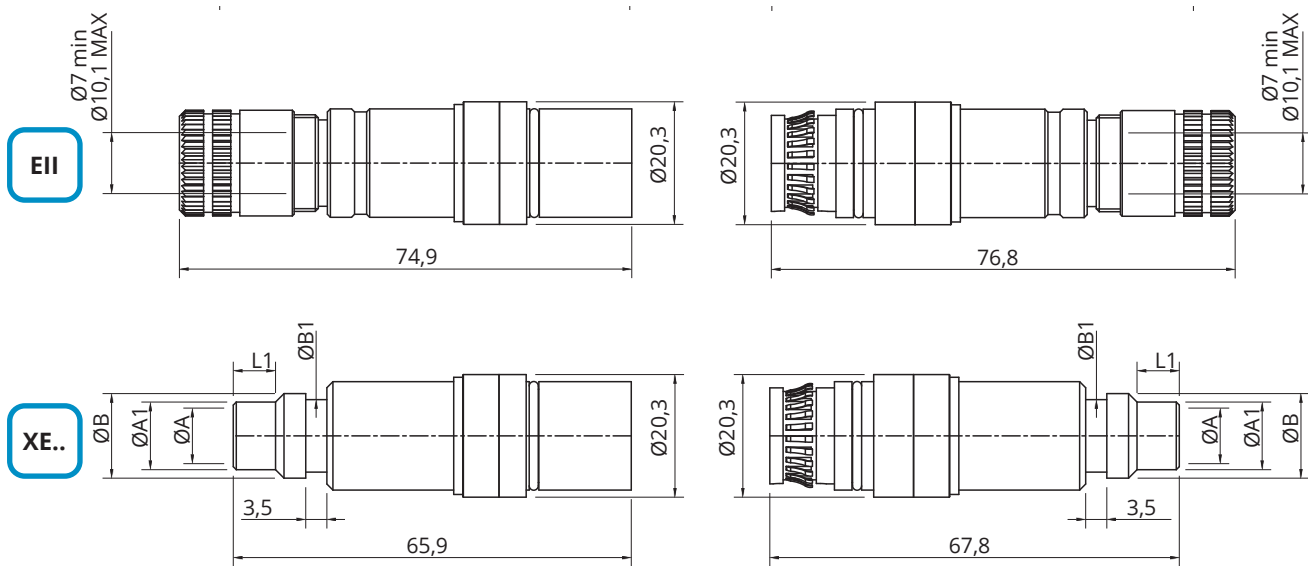
XE..	Adapter for crimping sleeve and heat shrink tube
-------------	--

EII	Double spring adapter (strain relief & shielding)
------------	---

-	Without Backshell
---	-------------------

GMM Modules - Backshell class

- GMM
- 6
- XE
- 14Z10
- P
- A09
- N04
-



XE..	Backshell Class	XE..A06	XE Module for cables up to $\text{Ø} 6\text{mm}$	A	A1	B	B1	L1
		6.2	7.8	11	9	8		
XE..A09		XE Module for cables up to $\text{Ø} 9\text{mm}$	A	A1	B	B1	L1	
		9.2	11.2	14	12	7		

GM Connector - Accessories



Dummy modules



Mechanical coding accessories



Module removal tool

Dummy modules

Order Number	Short Description	Dummy Modules
VS366229	GMM 614	For plug module cavity
VS366230	GMM 114	For receptacle module cavity

Mechanical coding accessories

Order Number	Short Description	Coding pins
VS366227	GMM 42	Threaded post
VS366228	GMM 43	Threaded cap

Module removal tool

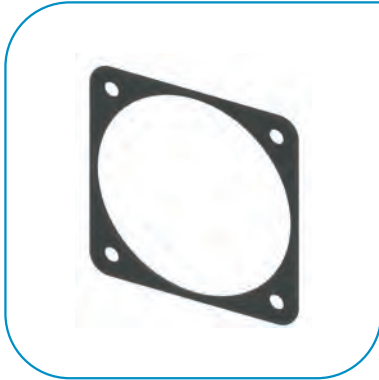
Order Number	Short Description	Tools
VS366243	GMM RT	Module extraction tool
VS366244	GMM RTP-14*	Module extraction protection for modules 14S and 14Z
VS366245	GMM RTP-C7*	Module extraction protection for modules C7

* must be used with GMM-RT

GM Connector - Accessories

Gaskets

These gaskets are used to make panel connectors water resistant.



Panel Gasket

Gaskets for front mounting panel connectors (0 connectors):

- gasket C215: non conductive chloroprene rubber gasket (IP67 protection)
- gasket C215R: conductive chloroprene rubber gasket with embedded metal screen (IP65 protection).
These gaskets guarantee watertightness and RFI shielding

Order Number	Short Description	Panel Gasket
VS412307	C215-24	non-conductive (0)
VS412357	C215R-24	conductive (0)
VS412315	C215-40	non-conductive (0)
VS412361	C215R-40	conductive (0)

Gaskets for rear mounting panel connectors (3 connectors):

- gasket C216: non conductive chloroprene rubber gasket (IP67 protection)
- gasket C216R: conductive chloroprene rubber gasket with embedded metal screen (IP65 protection).
These gaskets guarantee watertightness and RFI shielding

Order Number	Short Description	Panel Gasket
VS412407	C216-24	non-conductive (3)
VS412457	C216R-24	conductive (3)
VS412411	C216-40	non-conductive (3)
VS412461	C216R-40	conductive (3)

GMM Modules - Accessories



Contacts pair Cat. 7A - C7 module

Order Number	Short Description	Gender
VS366241	GMM CP-S- C7	Socket
VS366242	GMM CP-P-C7	Pin



Protection Cap - C7 module

Order Number	Short Description	Type
VS366239	GMM TP-S-C7	For Socket module
VS366240	GMM TP-P-C7	For Pin module

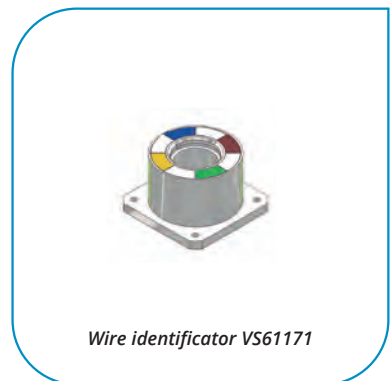
GMM Modules - Crimping Tools

For the instructions concerning the contacts crimping please consult the tools manuals.

We recommend to respect the following general rules:

- always use the tools recommended by Radiall VanSystem's in the catalogue or manuals
- apply the suggested norms for tool maintenance and calibration

Do not use alternative greases or oils which could damage the insert and affect the functionality of the connector.



Modules type	Module extraction tool	Module extraction protection	Contacts insertion tool	Contacts extraction tool	Socket contacts guide pin	Contacts crimping tool	Wire stripping tool
14S9/2/5/7/A7	VS120206	VS61124	VS61036	VS61170	VS61020	VS61024+VS61001	-
14Z8	VS120206	VS61124	VS61036	VS61057	-	VS61000+VS61060	-
14Z10/12/14	VS120206	VS61124	VS61036	VS61057	-	VS61000+VS61060	-
C7 *	VS120206	VS61167	-	-	-	VS61165	VS61166
P4	VS120206	-	**	**	-	**	-
P8	VS120206	-	**	**	-	**	-
13P3	VS120206	-	**	VS61023	VS61021	VS61024+VS61001	-
C4 - C8	VS120206	-	**	**	-	**	-

* For a faster wire identification & easier assembly we suggest to add VS61171 to the C7 standard tool kit

** Consult factory for suitable tool and assembly instructions

Information regarding the use of the product within recommended safety limits

To use the connectors described in this catalogue according to the necessary safety requirements we suggest you apply the following criteria:

- use the connectors and connected cables within their electrical and environmental limits
- follow the characteristics of each version (shell, class and type of strain relief) and carefully choose the appropriate connector for the required use
- make sure to respect the procedures regarding the correct assembly of connectors and the crimping of contacts
- any connector damaged during shipment, storage, assembly or use should be replaced
- never uncouple the connectors when under power
- always protect the parts against shock when the circuit is under power
- always check the circuit before putting it under power
- consult Radiall VanSystem Srl if in doubt
- the user must take final responsibility for electrical safety Radiall VanSystem Srl reserves the right to amend the specifications of this catalogue without issuing prior notice.

For the instructions concerning assembly and crimping of contacts please consult the appropriate tools manuals.

We recommend to respect the following general rules:

- to be used always the tools recommended by Radiall VanSystem's catalogue or manuals
- to be applied the suggested norms for tool maintenance and calibration

DO NOT USE ALTERNATIVE GREASES OR OILS which could damage the insert and affect the functionality of the connector. Radiall VanSystem Srl reserves the right to amend the specifications of this catalogue without issuing prior notice.

The data defined in this document are given as an indication. In the effort to improve our products, we reserve the right to make any change judged necessary.



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