

GM

Modular Bayonet connectors:

a flexible solution for data and signals transmission in railways harsh environment.

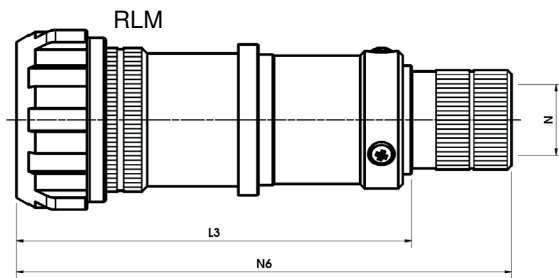
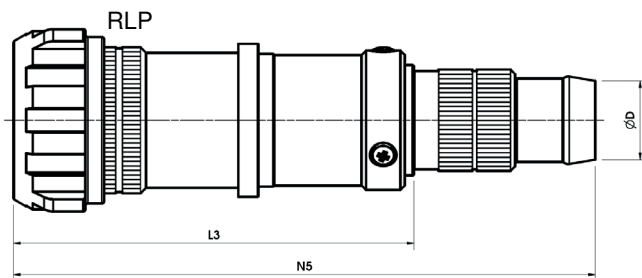
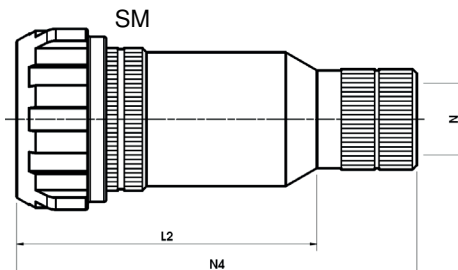
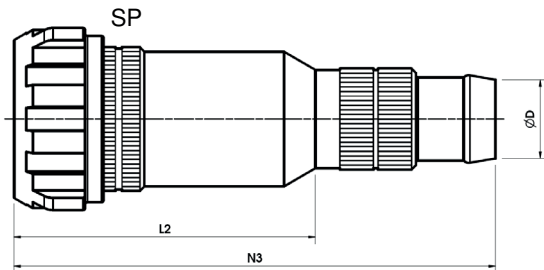
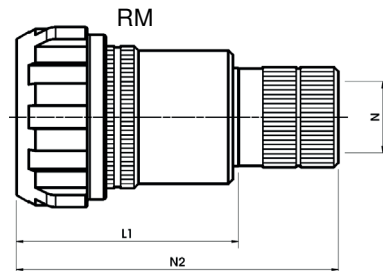
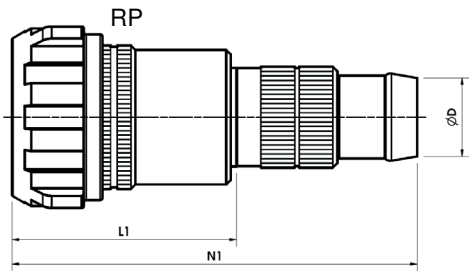
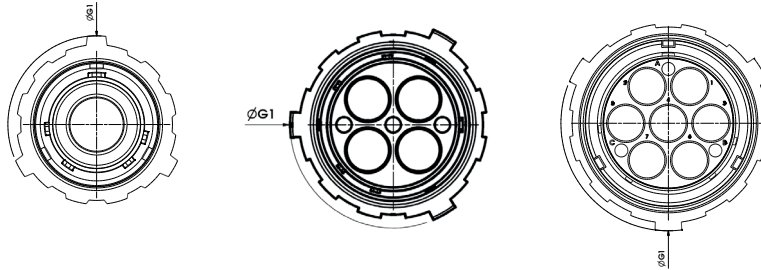
- ✓ Passenger control
- ✓ Networking and lighting control
- ✓ Diagnostic support for brakes, motors and doors
- ✓ Passenger display and Internet connection

- 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.
- IP67 rating according EN 60529.
- 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.



Straight plug connector: cable accessories

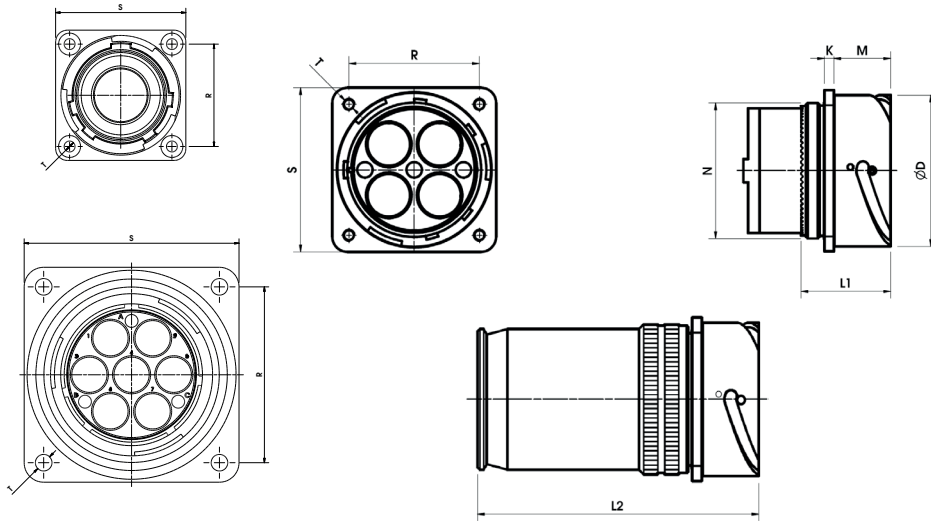
- RP: Back shell , grommet and adapter for rubber hose
- SP: : Back shell, internal strain relief, grommet and adapter for rubber hose
- RLP: Back-shell for double headed jumper, grommet and adapter for rubber hose
- RM: Back shell and adapter with grommet and metric thread
- SM: Back shell, internal strain relief, adapter with grommet and metric thread
- RLM: Back-shell for double headed jumper, adapter with grommet and metric thread



Size & modules nr	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	N thread	ØD max.
24A1	60.3		130	147	n.a.	105	169	176	154	218	M20*	*
40A4	88.3	105	183	154	140	218	182	183	261	225	M32*	*
48A7	109.3	151	223	187	171	238	208	208	289	233	M32*	*

* = Please consult our Sales Office

Receptacle connector: cable accessories



Size & modules number	ØD +0/-0.15	S ±0.3	R ±0.1	T		K ±0.2	M ±0.2		L1 max.		L2 max.	
				front mounting	rear mounting		front mounting	rear mounting	front mounting	rear mounting	front mounting	rear mounting
24A1	40.9	44.45	34.93	Ø3.7 H13	M4	4	20.3	23.4	35.9	38.8	122.1	125
40A4	65.5	49.8	55.6	Ø4.4 H13	M5	4	22.3	24.45	37.9	38.9	124	125
48A7	84-90 #	110	90	Ø8.5 H13	M8	8	45		120		120	

= double diameter

Order codes

Connectors

	GM	6	RM20*	24A1	P	A001
Series Prefix	GM =	Series prefix				
Shell type	2 =	Front panel mounting				
	3 =	Rear panel mounting				
	6 =	Straight plug				
	- =	W/out back-shell				
	A =	Internal strain relief & w/out rear thread				
Back-shell	RP/RM =	Back-shell for standard use				
	SP/SM =	Back-shell + internal strain relief				
	RLP/RLM =	Back shell for double headed jumper				
Size and modules nr	24A1 =	Size 24 with 1 module				
	40A4 =	Size 40 with 4 modules				
	48A7 =	Size 48 with 7 modules				
Modules gender	P =	Male modules				
	S =	Female modules				
Modification code	- =	Supplied w/out modules				
	*** =	Consult factory				

* metric thread or rubber size

GMM modules

GM connectors are designed for accepting modules for many different applications:

- Ethernet and data transmission
- Coaxial connections
- Fibre optic
- Power cables
- Signals up to 14 wires

Each module is pneumatically sealed in its housing (the connector is suitable for pressurized cabin).

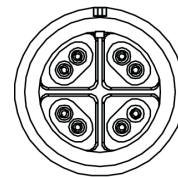
Plastic hard insert offers positive module rear release retention.

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 23 AWG - available 24 and 26 AWG.
- Reduced components quantity makes easier and more reliable assembly.

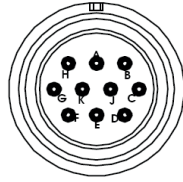


Materials and finishes

Shell	Aluminum alloy – Electro-less nickel plated
Inner contacts	Copper alloy – Gold plating over Nickel
Insulator	Controlled impedance thermo plastic resin

12Z10 module

- 2x4 contact termination 0.5 sqmm. – available 26÷20 AWG
- High grade efficiency shielding for each module's EMI/RFI protection



- ✓ Ethernet Cat 5A
- ✓ Ethernet Cat 6

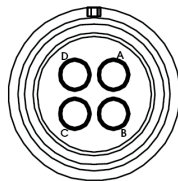


Materials and finishes

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)

14S2 module

- 4 contact terminations 0.5 sqmm. – available 26÷20 AWG and 1÷1.5 sqmm
- High grade efficiency shielding for each module's EMI/RFI protection



- ✓ Ethernet Cat 5
- ✓ MVB
- ✓ RS485



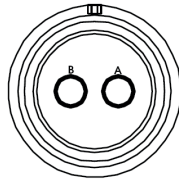
Materials and finishes

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)

14S9 module

- 2 contact terminations 0.5 sqmm. – available 26÷20 AWG and 1÷1.5 sqmm
- High grade efficiency shielding for each module's EMI/RFI protection

✓ WTB



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)

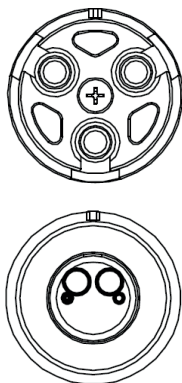
FO optical module

accepted optical contacts

FO3 3 SC type

FOB2 2 expanded beam

FOB4 4 expanded beam



C coax module



Suitable for cables

RG59

RG58

C8

RG59

RG178

RG179

RG187

C4

RG59

Application

Wi-Fi 2.4GHz & 5 GHz

C4R

GSMR

GPS

WLAN

P power module

	Poles nr	Rated current	Sq.Mm section
P-4	1	80 A	2.5÷25
P-8	1	46 A	2.5÷10
P3-13	3	23 A	1÷6



Materials and finishes

Shell
Contacts
Insulator

Aluminum alloy – Electro-less nickel plated

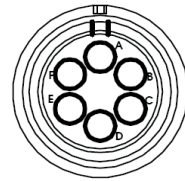
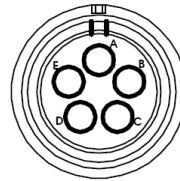
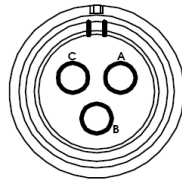
Copper alloy – Gold plating over Nickel

Fire resisting rubber compound complies EN 45545-2 - NFPA 130 (ASTM E 162, ASTM E 662, BSS 7239)

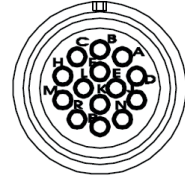
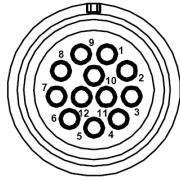
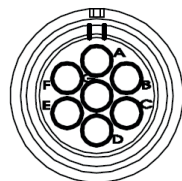
Multifunctional modules



Available contacts layout



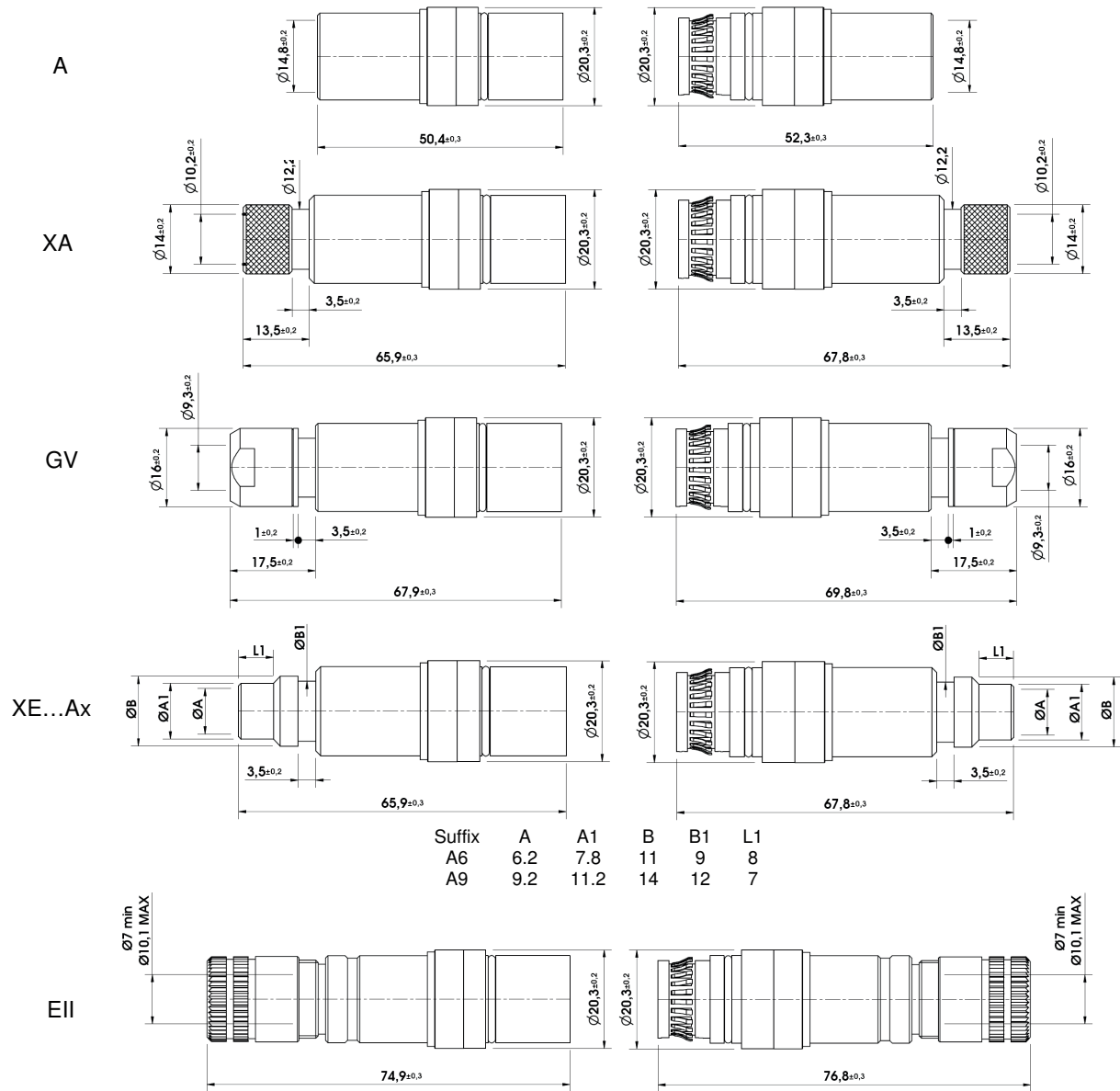
Module code	14S7	14S5	14S6
Contacts nr	3	5	6
Available contact terminations	18÷16AWG - 1÷1.5sq.mm. 0.15÷0.5sq.mm. - 20÷26AWG	18÷16AWG - 1÷1.5sq.mm. 0.15÷0.5sq.mm. - 20÷26AWG	18÷16AWG - 1÷1.5sq.mm. 0.15÷0.5sq.mm. - 20÷26AWG
Working voltage	500Vac – 700Vdc	200Vac – 250Vdc	200Vac – 250Vdc
Rated current	13A	13A	13A



Module code	14SA7	14Z12	14Z14
Contacts nr	7	12	14
Available contact terminations	18÷16AWG - 1÷1.5sq.mm. 0.15÷0.5sq.mm. - 20÷26AWG	18÷16AWG - 1÷1.5sq.mm. 0.15÷0.5sq.mm. - 20÷26AWG	0.15÷0.5sq.mm. - 20÷26AWG
Working voltage	200Vac – 250Vdc		
Rated current	13A		

Materials and finishes

Shell	Aluminum alloy – Electroless 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)



Order Code

Prefix	GMM	GMM	6	EII	14S9	P	N02
Shell type	1 = Module for receptacle 6 = Module for plug						
Module adapter	A = Short back shell XA = Adapter for heat shrink tube GV = Adapter with shielding nut & cone XE...Ax = Adapter for crimping sleeve and heat shrink tube EII = Double spring adapter (strain relief & shielding)						
Module code	... = See module layouts at previous pages						
Contacts gender	P = Male contacts module (#) S = Female contacts module (#) LC = Supplied w/out contacts						
Contacts termination	N01 = 16±18AWG / 1±1.5sq.mm. N02 = 0.15±0.5sq.mm. - 20±26AWG N03 = AWG23 N... = Consult Factory for dedicated contact equipment						

(#) C7 modules available as type1 with female contacts and type 6 with male contacts

Connector accessories & Assembly tools

Dummy modules

For male module cavity:
For female module cavity:

Order Code
GMM614
GMM114



Mechanical coding accessories

Threaded post
Threaded cap

Order Code
GMM42
GMM43



Modules assembly tools

Modules code	Module extraction tool	Module extraction protection	Contacts insertion tool	Contacts extraction tool	Female contacts guide pin	Contacts crimping tool	Wire stripping tool
14S9/2/5/7/A7	120206	61124	61036	61170	61020	61024+61001	-
12Z10	120206	61124	61036	61057	-	61000+61060	-
14Z12	120206	61124	61036	61057	-	61000+61060	-
14Z14	120206	61124	61036	61057	-	61000+61060	-
C7 (1)	120206	61167	-	-	-	61165	61166
P4	120206	-	61054	61055+61056	-	(3)	-
P8	120206	-	61013	61015	-	(3)	-
P13-3	120206	-	61011 (2)	61023	61021	61024+61001	-
C	120206	-	(3)	(3)	-	(3)	-

1) For a faster wire identification & easier assembly we suggest to add 61171 to the C7 standard tool kit

(2) Use 61012 for 4 & 6 sq.mm. wires

(3) Consult factory for suitable tool and assembly instructions

