



Amphenol Air LB France



1900 SIM Connector series

PK (16/10/2013 – v.1)

www.amphenol-airlb.fr

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1900 SIM : SIM modules in the shell of a 1900 connector

Main Features and Benefits at a glance:

- **In/Out rectangular connector** (Plugs / Receptacles / Backshells)
- **Modularity** (SIM / EN4165 modules)
- **Lightweight** Composite material (weight saving)
- **Shielded versions or not:**
 - **3 plating:** Bright Nickel, Olive Drab Cadmium, Black Zinc Nickel
 - **or without plating**
- **Quick install** (assembly of all connector parts without tools)
- **3 locking systems:** Quick locking, ¼ turn or screw (standard)
- **36 keying positions**
- **ABD031 / FAR25853**
- **Temperature range: -55°C to +175°C**



1900 SIM : SIM modules in the shell of a 1900 connector

In/Out rectangular connector

Easy-to-use



Plug



Receptacle with flange



Receptacle without flange



Backshell for shielded applications
(2 half-covers)



Standard backshell

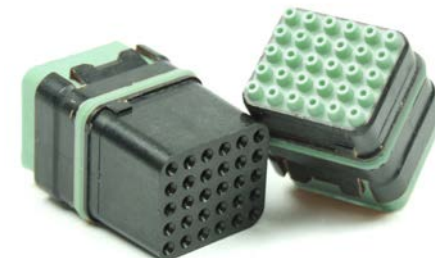
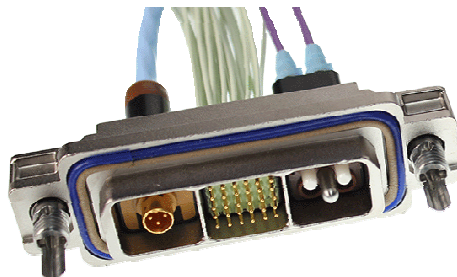
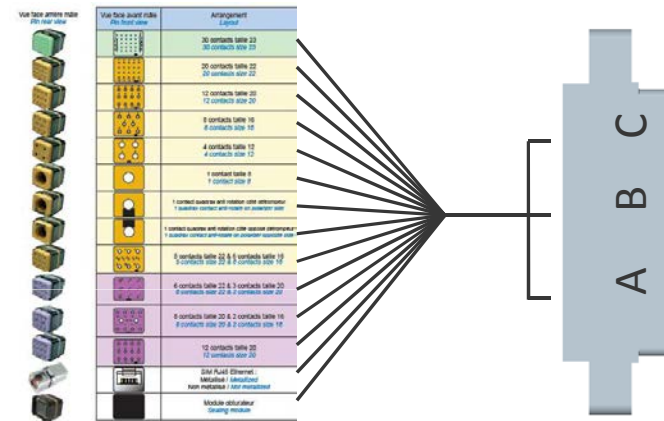


1900 SIM : SIM modules in the shell of a 1900 connector

Modularity

- Full range of SIM / EN4165 modules
 - Signal, power (#23 up to #8)
 - RJ45, Quadrx, Twinax, Coax...
 - Optical modules
- High density : up to 90 cts size 23
- Possible segregation within the connector :
 - 1 connector shell = Thousands possible layouts !

Modularity





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HD SIM Modules

(sealed or not versions)

Contacts size 23 from BACC47



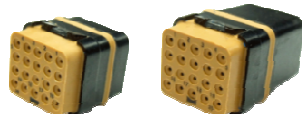
30 cts # 23

For Copper cable contacts only

Standard SIM Modules

(sealed or not versions)

All contacts from MIL-C-39029



20 cts # 22

For Copper cable contacts only



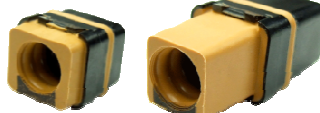
1 ct # 8

For Copper cable contacts only



12 cts # 20

For both Aluminum and Copper cable cts



1 ct Quadrax

For both Aluminum and Copper cable cts



8 cts # 16

For both Aluminum and Copper cable cts



5 cts # 22 + 6 cts # 16

For both Aluminum and Copper cable cts



4 cts # 12

For both Aluminum and Copper cable cts



Sealing Module
light version

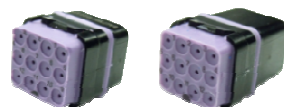


Sealing Module
standard version

ABS 1152 Modules

(sealed or not versions)

Contacts size 20 from EN3155



12 cts # 20

For both Aluminum and Copper cable cts



8 cts # 20 + 2 cts # 16

For both Aluminum and Copper cable cts



6 cts # 22 + 3 cts # 20

For both Aluminum and Copper cable cts

Modules de Masse

(sealed or not versions)



8 cts # 16

1 ct # 8

4 cts # 12

RJ 45 Modules



Cat 6 pending

Shunt Modules

(sealed or not versions)

Contacts issus de la MIL-C-39029

Attention : Brown Grommet !!!



20 cts # 22
5 x 4 cts
shunted

20 cts # 22
10 x 2 cts
shunted

20 cts # 22
3 x 4 cts
+ 4 x 2 cts
shunted

Modules with PCB mounting pin contacts

(sealed or not versions)



Angled versions



Straight versions

Fiber Optic Modules



Elio



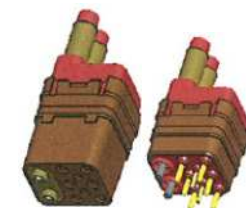
Luxcis



MPO



Pending
versions





1900 SIM : SIM modules in the shell of a 1900 connector

Lightweight Composite

Weight saving

Weight (Connector shells + Polarizers only) :

WEIGHT (g)	1900SIM 3 modules	SIM series 2 2 modules	SIM series 2 4 modules
Plug + Polarizers	16,53	15,49	19,21
Standard Receptacle + Polarizers	22,51	10,69	14,21
Backshell for Plug (chimneys included)	12,84	20,66	33,54
Backshell for Receptacle (chimneys included)	12,84	18,69	31,82
Total WEIGHT (g) – Shells only	64,72	65,53	98,78

1900SIM : Lighter than the legacy SIM series !

Weight (connector shells only) :
 - 1,25% compared to SIM 2 modules
 - 35% compared to SIM 4 modules



1900 SIM : SIM modules in the shell of a 1900 connector

Lightweight Composite

Weight saving

Global Weight (Shells + Polarizers + Modules + Contacts) :

→ example of Modules 20 cts#22

	1900SIM	SIM series 2	SIM series 2
Number of SIM Modules	3 modules	2 modules	4 modules
Number of Contacts - Global	60	40	80
Weight : Modules + Contacts (g)	29,22	19,48	38,96
Total WEIGHT (g) – Shells + Modules + Cts	93,94	85,01	137,74

Total Weight (Shells + Modules + Contacts) :
 + 10% compared to SIM 2 modules
 - 32% compared to SIM 4 modules

	1900SIM	SIM series 2	SIM series 2
Total WEIGHT per contact (g)	1,57	2,13	1.72

Total Weight per contact :
 - 26% compared to SIM 2 modules
 - 9% compared to SIM 4 modules



1900 SIM : SIM modules in the shell of a 1900 connector

Density

Contact density : Comparison chart

	Versions WITHOUT flange			Versions WITH flange		
Density (cts / cm ²)	1900SIM 3 modules	SIM series 2 2 modules	SIM series 2 4 modules	1900SIM 3 modules	SIM series 2 2 modules	SIM series 2 4 modules
Surface area (cm ²)	12,88	8,88	13,76	20,73	11,73	17,95
Modules SIM 30 cts size 23	6,99	6,76	8,72	4,34	5,12	6,68
Modules SIM 20 cts size 22	4,66	4,50	5,81	2,89	3,41	4,46
Modules SIM 12 cts size 20	2,80	2,70	3,49	1,74	2,05	2,67
Modules SIM 8 cts size 16	1,86	1,80	2,33	1,16	1,36	1,78
Modules SIM 4 cts size 12	0,93	0,90	1,16	0,58	0,68	0,89
Modules SIM 1 ct size 8	0,23	0,23	0,29	0,14	0,17	0,22

Contact density : Versions without flange

+ 3% compared to SIM 2 modules

- 20% compared to SIM 4 modules

Contact density : Versions with flange

- 15% compared to SIM 2 modules

- 35% compared to SIM 4 modules



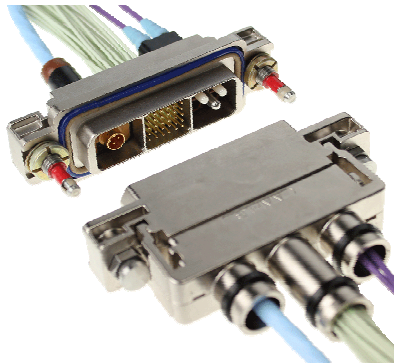
1900 SIM : SIM modules in the shell of a 1900 connector

4 versions available

→ With or without plating (Shielding applications)

With plating : 3 versions available

1



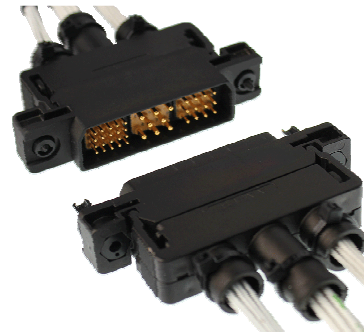
Bright nickel
with shielded backshell
« quick install »

2



Olive Drab Cadmium
with shielded backshell
« quick install »

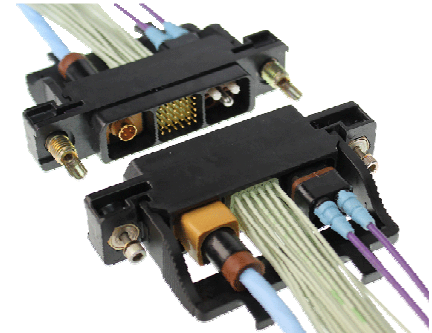
3



Black Zinc-Nickel (ROHS)
with shielded backshell
« quick install »

Without plating

4



Unplated thermoplastic
with standard backshell

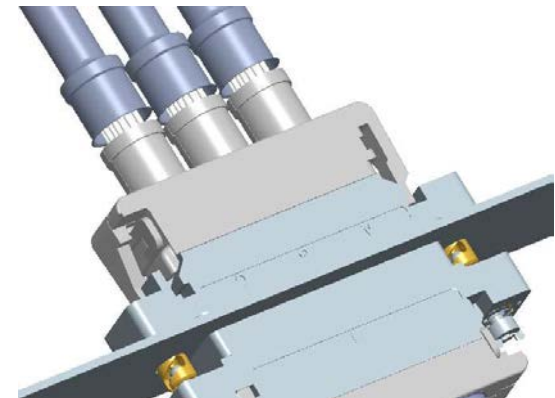
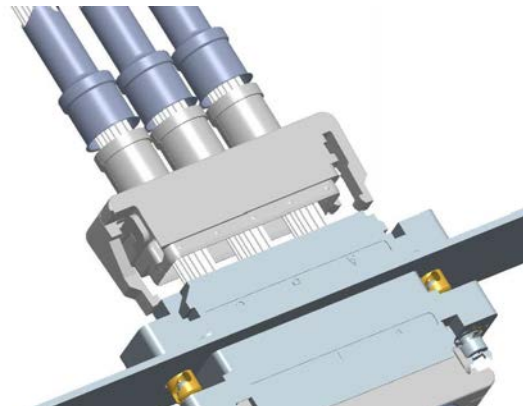
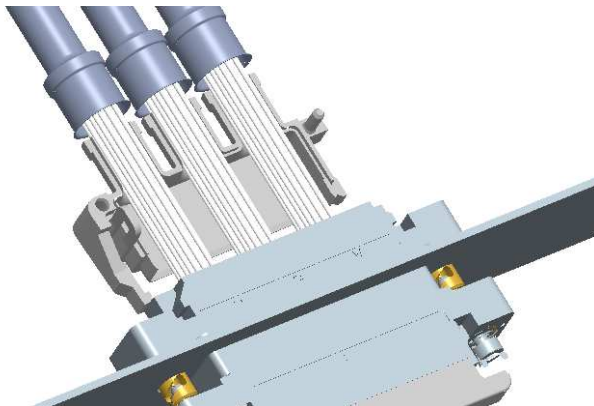


1900 SIM : SIM modules in the shell of a 1900 connector

Quick Assembly of the backshells (whatever the plating)

- 1 - Position the bundles in $\frac{1}{2}$ chimneys of half-cover.
- 2 - Clip the second half cover to obtain the complete backshell.
- 3 - Clip the backshell on the rear side of the plug or receptacle.
- 4 - Position the metallic over-braiding on chimneys and attach them with a Band-it clamp.

Time saving





1900 SIM : SIM modules in the shell of a 1900 connector

3 locking systems available

Time saving

Quick locking



No tool required
Very Quick locking

¼ turn locking



Standard tool
Quick locking

Standard locking (by screw)



Standard tool
“Long” locking



1900 SIM : SIM modules in the shell of a 1900 connector

Focus : Quick locking system : principle

Time saving

1 - Connection : Position plug on receptacle and push in connection direction until lock them together : a clipping is feeling and red visual marking are not yet visible



2 – Disconnection : Only push on 2 buttons and remove plug from receptacle.

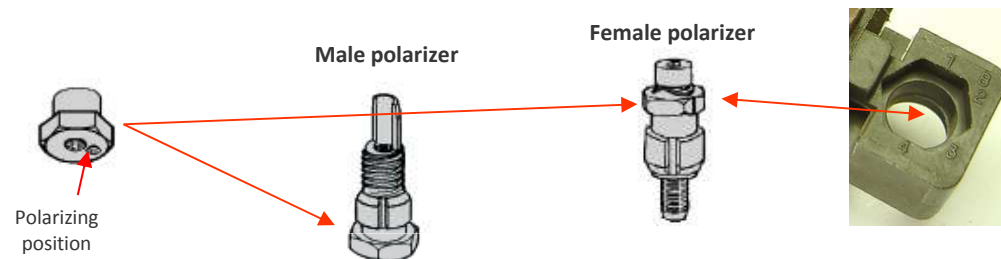




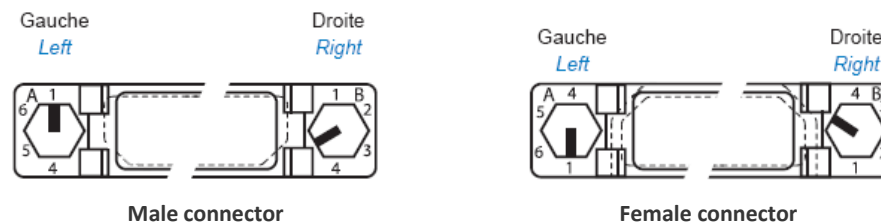
1900 SIM : SIM modules in the shell of a 1900 connector

36 keying positions :

- Polarization integrated in the locking system



- 6 positions available for each locking system → $6 \times 6 = 36$ positions



- Both Plug and Receptacles can be fitted with Male OR Female polarizers
→ much more keying positions



1900 SIM : SIM modules in the shell of a 1900 connector

Part numbering system : Connectors

1900SIM	2 X 3 X X X XX	Designation
2		(SERIE)
2		(Series 2)
X		MATERIAL
S		Standard composite (without plating / not metalized)
B		Shielded composite
3		NUMBER of MODULES
3		3 modules
X		SHELLS
0		Plug
2		Standard receptacle
4		Flanged receptacle
X		PLATING / SHELL METALIZATION
0		Without plating (for standard composite S versions only)
K		Bright Nickel (for shielded composite B versions only)
V		Olive Drab Cadmium (for shielded composite B versions only)
Z		Black Zinc Nickel (for shielded composite B versions only)
X		EQUIPMENT CODE (material of the Polarizer according to the shell metalization)
000		Shell supplied without polarizer
A		Shell supplied with standard screw type polarizers – Female F (to be mounted on Plug and standard Receptacle only)
B		Shell supplied with standard screw type polarizers – Male M
C		Shell supplied with ¼ turn polarizers – Female F (to be mounted on Plug and standard Receptacle only)
D		Shell supplied with ¼ turn polarizers – Male M
E		Shell supplied with Quick Lock polarizers – Female F (to be mounted on Plug and standard Receptacle only)
F		Shell supplied with Quick Lock polarizers – Male M
XX		POLARIZING CODE (For Equipment Code A to F only)
00		Polarizers supplied not mounted in the shells
XX		Polarizers supplied mounted in the shells in suited positions



1900SIM2B30K000



1900 SIM : SIM modules in the shell of a 1900 connector

Part numbering system : Metalized Accessories

1900SIM	2	X	3	A	XX	X	Designation
	2 2						(SERIE) (Series 2)
		X B					MATERIAL Shielded composite
			3 3				NUMBER of MODULES 3 modules
				A	XX		TYPE of ACCESSORIES
					12		Rear backshell with chimneys (monoblock)
					13		Rear backshell with removable chimneys
						X	PLATING / METALIZATION of the ACCESSORIES
						K	Bright Nickel (for Bright Nickel connectors only)
						V	Olive Drab Cadmium (for Olive Drab Cadmium connectors only)
						Z	Black Zinc Nickel (for Black Zinc Nickel connectors only)



1900SIM2B3A12K



1900 SIM : SIM modules in the shell of a 1900 connector

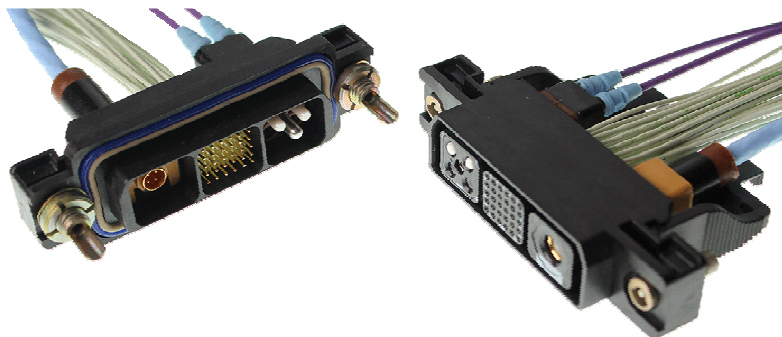
Part numbering system : Other Accessories



CABLE CLAMP	001901 050 00	Straight standard cable clamp (for Standard composite connectors)
	001901 051 00	90° angled standard cable clamp (for Standard composite connectors)
POLARIZERS	Standard	001901 170 00 standard screw type polarizers – Female F – For Standard composite or Olive Drab Cadmium connectors
		001901 160 00 standard screw type polarizers – Male M – For Standard composite or Olive Drab Cadmium connectors
		001901 170 27 standard screw type polarizers – Female F – For Standard composite or Bright Nickel connectors
		001901 160 27 standard screw type polarizers – Male M – For Standard composite or Bright Nickel connectors
		001901 170 10 standard screw type polarizers – Female F – For Standard composite or Black Zinc Nickel connectors
		001901 160 10 standard screw type polarizers – Male M – For Standard composite or Black Zinc Nickel connectors
	1/4 turn	3354 0210 045 1/4 turn type polarizers – Female F – For Standard composite or Olive Drab Cadmium connectors
		3354 0200 045 1/4 turn type polarizers – Male M – For Standard composite or Olive Drab Cadmium connectors
		3354 0210 027 1/4 turn type polarizers – Female F – For Standard composite or Bright Nickel connectors
		3354 0200 027 1/4 turn type polarizers – Male M – For Standard composite or Bright Nickel connectors
		3354 0210 103 1/4 turn type polarizers – Female F – For Standard composite or Black Zinc Nickel connectors
		3354 0200 103 1/4 turn type polarizers – Male M – For Standard composite or Black Zinc Nickel connectors
	Quick Lock	3357 0080 045 Quick Lock type polarizers – Female F – For Standard composite connectors or Olive Drab Cadmium connectors
		3357 0070 045 Quick Lock type polarizers – Male M – For Standard composite connectors or Olive Drab Cadmium connectors
		3357 0080 711 Quick Lock type polarizers – Female F – For Standard composite or Bright Nickel connectors
		3357 0070 711 Quick Lock type polarizers – Male M – For Standard composite or Bright Nickel connectors
		3357 0080 103 Quick Lock type polarizers – Female F – For Standard composite or Black Zinc Nickel connectors
		3357 0070 103 Quick Lock type polarizers – Male M – For Standard composite or Black Zinc Nickel connectors
TOOLS	3357 1001 000	Tool for Quick Lock polarizers
	3357 1002 000	Tool for backshell removing



1900 SIM : SIM modules in the shell of a 1900 connector



IN CONCLUSION

Main features to be kept in mind:

- EN3545/1900 shells + EN4165/SIM modules : **best of 2 standards**
- Various locking systems (including Quick locking) **(time saving)**
- Lightweight **(weight saving)**
- Various plating (including **RoHS**)
- Quick install backshells **(time saving)**

