SOURIAU

SMS IP:
high voltage sealed plastic connector

A connector designed for indoor railway equipments, using the standard Ø 1.6 contact.

Safe	✓	Finger proof High operating voltage up to 500 V
Compliant to fire and smoke standards	✓	CEN / TS 45-545 NF F 16-101/16-102
Sealed	✓	IP66 & IP67
Easy to handle	✓	1 stainless steel latch
Designed for railways	✓	NF F 61-030 derivated

IRIS Certification

RoHS Compliant

Esterline Connection Technologies

SOURIAU on the railway market

Standard

The SOURIAU solution offers a wide range of connector layouts providing a simplified process from purchasing to harnessing: 1 type of contact to order, to manage, to stock, to crimp for a wide range of connectors.
SOURIAU's standardisation policy is the best compromise between technology and cost.

High Speed

SOURIAU connectors ensure the continuity of the network with railway qualified connectors integrating new technologies: copper contacts, Quadrax and fibre optics to transfer high speed Ethernet and other data protocols.

Environment & Safety

SOURIAU, along with its customers is committed to the research of energy efficiency and sustainability.
The use of lightweight materials, fiber optics and high contact density contribute to the weight reduction of train equipments and help railway operators to save energy.

Technical features (NF F 61-030 derivated)

Mechanical
- Following NF F 61-030
- Durability: 500 mating/unmating
- Vibrations & shocks: EN 61-373 Cat.2
- Locking system: 1 metallic latch - Audible "Click"
- Keying system: 3 different positions

Electrical
- Current rating per contact: 15 A maxi
- Operating voltage: ≤ 500 Vdc / ≤ 380 Vac following NF F 61-030
- 500 Vdc/ac following EN 50-124-1
- Creepage distances (unmated): > 12 mm
- Clearance distances (unmated): > 8 mm
- Withstanding voltage: 3250 V
- Insulation resistance: ≥ 5000 MΩ
- Contacts resistance: ≤ 2.5 mΩ

Material
- Plug & receptacle: black thermoplastic
- Grommet & interfacial seal: light grey silicone
- Latch: stainless steel

Environmental
- Fire resistance, toxicity & smoke opacity:
  R23/HL3 following CEN/TS 45-545
  I3/F2 2 following NF F 16-101/16-102
- RoHS compliant
- Damp heat: 21 days / 40°C / 95% RH
- Operating temperature: -50°C to +100°C
- Fluids: NF F 61-030
- Corrosion: 500 hours salt spray

Sealed version (SMS IP66 & IP67)
- Sealing: IP66 & IP67 - Following CEI 60-529
- Delivered with pre-mounted grommets and interfacial seal
- IP rating is ensured if the grommets are in their cavities.

Ordering information

	SMS	3	P	IP67	-
Contact layout: 3 – 6 – 12					
Contact type: **P:** Plug for female contacts **R:** Receptacle for male contacts					
Application: **IP66 & IP67:** Sealed version **IP20:** Non sealed version - delivered without grommet					
Contacts: **-:** Without contact **K01:** With contacts RM16M23K or RC16M23K **K02:** With contacts RM14M23K or RC14M23K					

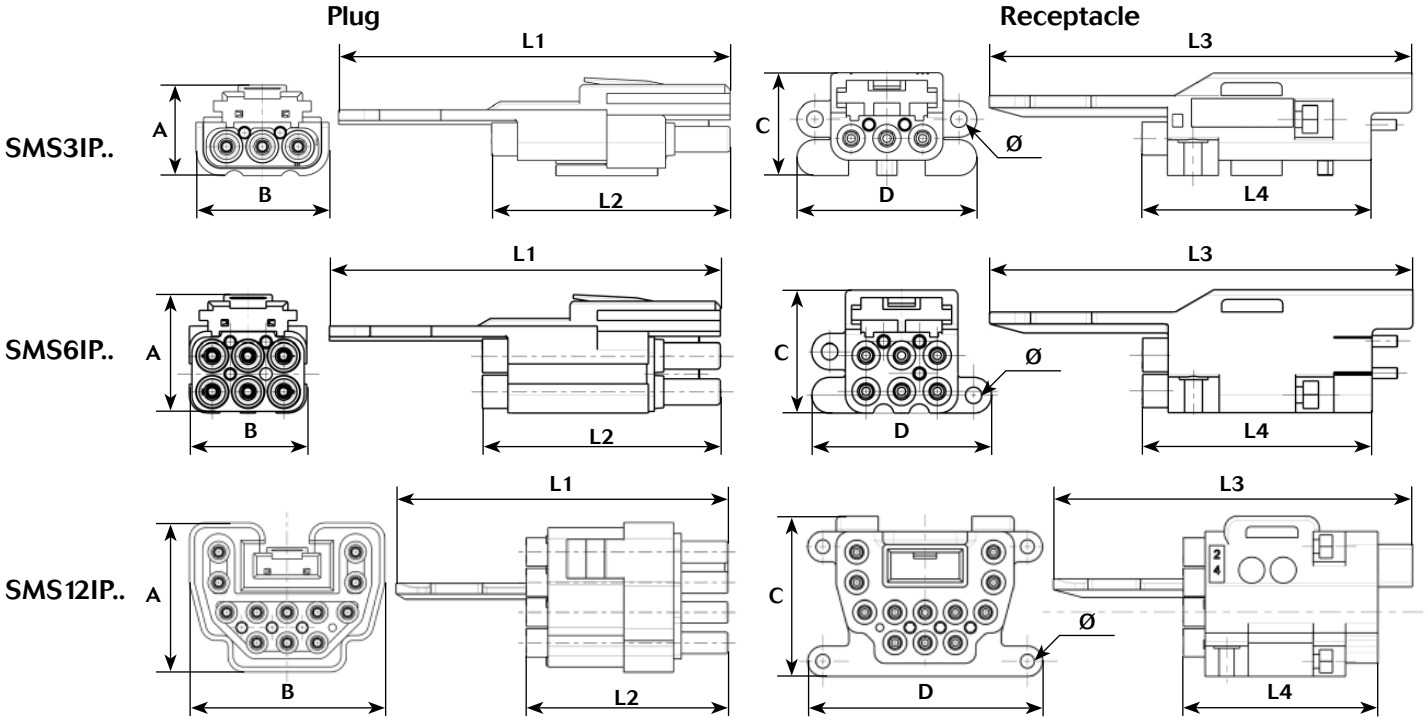
Contacts

- Standard crimp machined contact #16 compatible with EN 50-306-2 & EN 50-264-3-1 wires

Contact size	Type	Wire size			Part number		Mini insulator Ø mm	Max insulator Ø mm
		AWG	mm2	Max wire Ø mm	Male	Female		
#16 Ø 1.6 mm	Machined	20-16	0.5-1.5	1.8	**RM16M23K**	**RC16M23K**	1.15	3.8
		16-14	1.5-2.5	2.28	**RM14M30K**	**RC14M30K**	1.15	3.8

For other contact type consult us

Dimensions & weight

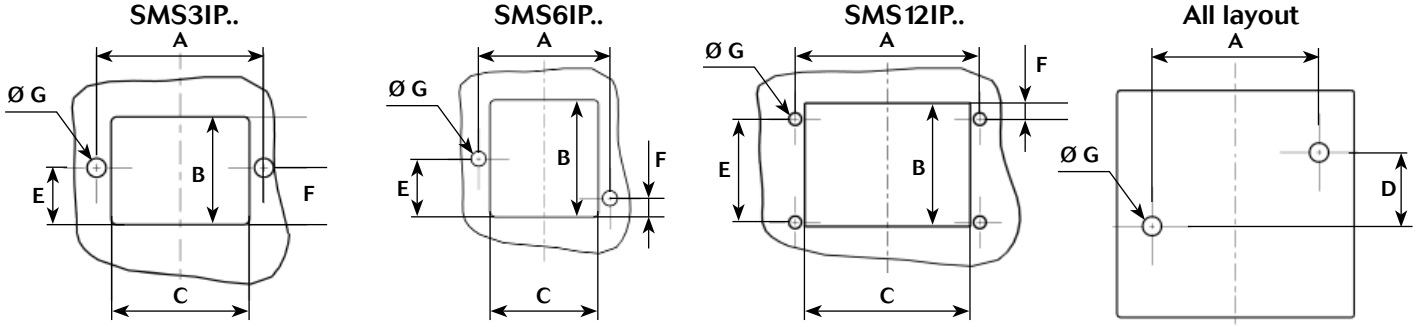


Part number		Layout	A	B	L1	L2	C	D	L3	L4	Ø	Weight *±0.2 g.	
Plug	Receptacle											IP20	IP66 & IP67
SMS3PIP..		3	18	26	77	42	-	-	-	-	-	13.3 g	16.1 g
	SMS3RIP..	3	-	-	-	-	20	35	83	40	3.2	16.4 g	17.4 g
SMS6PIP..		6	23	23	77	42	-	-	-	-	-	16.3 g	18.3 g
	SMS6RIP..	6	-	-	-	-	24	35	83	40	3.2	20.3 g	22.3 g
SMS12PIP..		12	35	46	77	42	-	-	-	-	-	40 g	45 g
	SMS12RIP..	12	-	-	-	-	30	54	83	40	3.2	48 g	53 g

* weight of the connector without contact

Panel cut out

	A	B	C	D	E	F	Ø G
SMS3IP..	28.2	18.3	23.3	12.5	9.6	9.6	3.2
SMS6IP..	28.2	25.1	23.3	12.5	8.5	4	3.2
SMS12IP..	47.4	31.4	42.5	12.5	26.3	4	3.2



Fixation on a panel | Fixation on a panel | Fixation on a panel | Fixation on a board

Note : all dimensions are in mm

Assembly instructions

Crimp contacts on wires

- Strip each wire to the lenght indicated.

Crimping tools

FT8

MH86164G

MH860

TP1142

Manual crimp pliers	Locator	Selector set-up - Wire section				
MH860 (M22520/7-01)	MH86164G or TP1142	6 0.5 mm²	7 0.75 mm²	7 1 mm²	8 1.5 mm²	-
FT8	-	4 0.5 mm²	4 0.75 mm²	5 1 mm²	5 1.5 mm²	-
AF8 (M22520/1-01)	TP1142	-	-	-	-	8 2.5 mm²

Following standard: EN 50306-2 Following standard: EN 50264-3-1

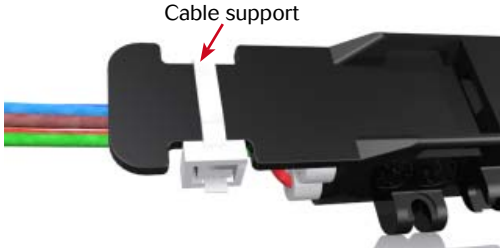
Contact insertion

- Locate the right cavity and use a contact (male or female), to bore each individual grommet in its center. Push the contact until mechanical stop.

- Check the correct contact retention by slightly pulling on the cable (no tools required).
- Check that each individual grommet is correctly plated on the back face of the connector, unless, put them properly.

Once all the contacts have been installed in the connector:

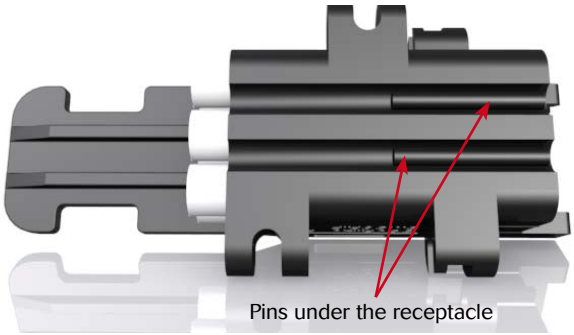
- Put the ty-rap in the designated cable support and tighten the ty-rap to gather the wires.

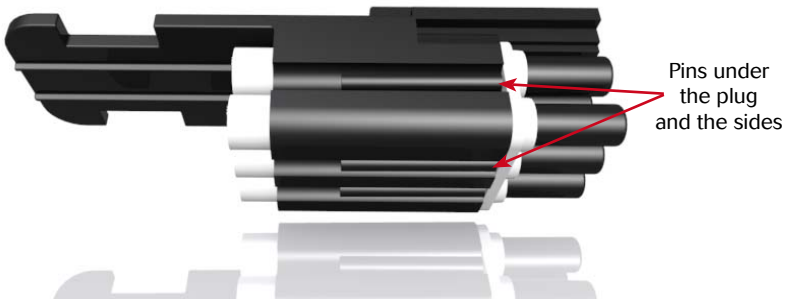


Receptacle coding

Connectors are supplied with coding pins, ensure to remove these pins before using the connectors.

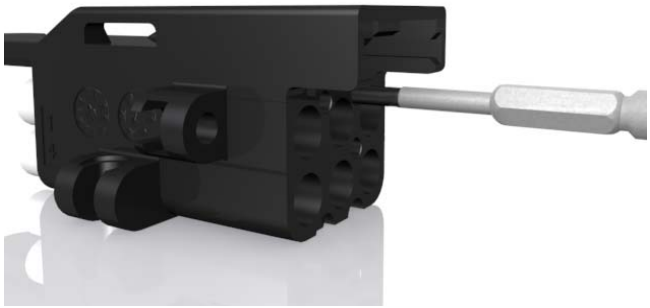
- Coding is done by 1 or 2 pins depending on the layout (see page 7).





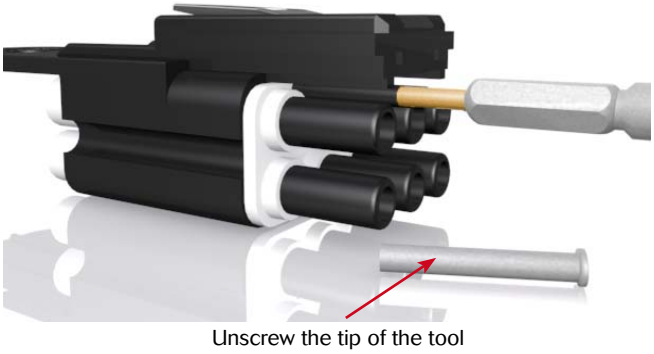
- Pre-locate the pin into the correct cavity depending on the choosen coding (see Coding configuration).

Receptacle



- Push the pin with the contact insertion tool (RX2025GE1) until mechanical stop.
  The outside height must be 5mm maxi.

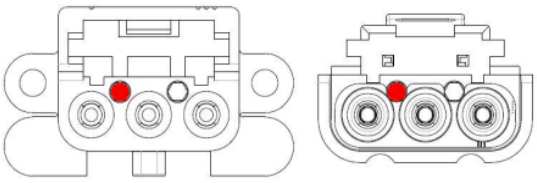
Plug



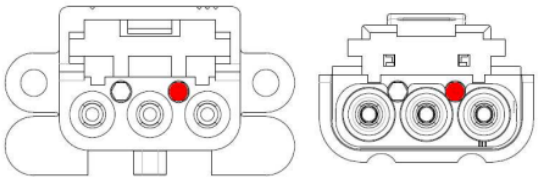
- Push the pin with the contact insertion tool (RX2025GE1) without its tip until mechanical stop.
  The outside height must be 10mm maxi.

Coding configuration

Layout 3

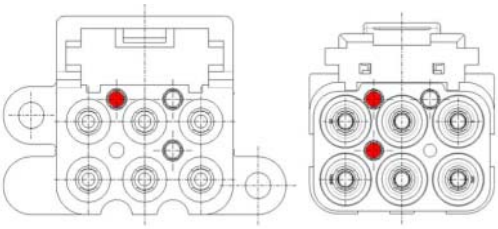


Coding A

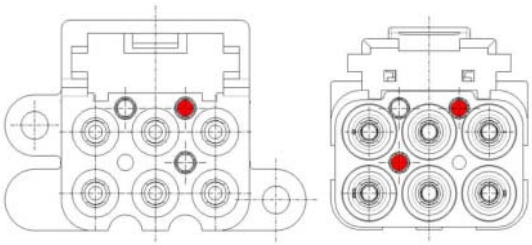


Coding B

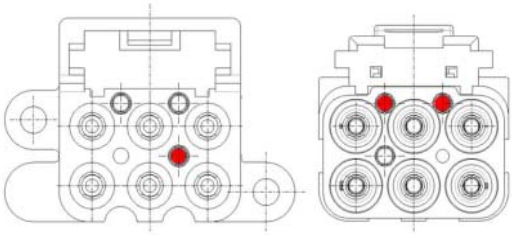
Layout 6



Coding A

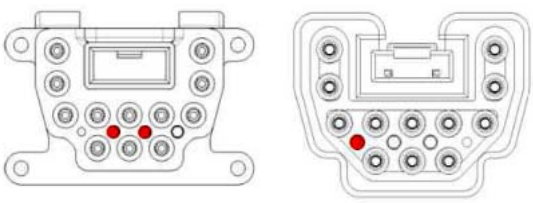


Coding B

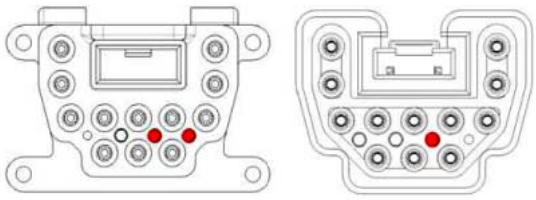


Coding C

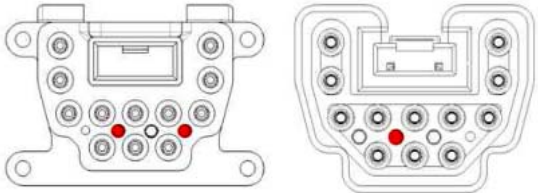
Layout 12



Coding A



Coding B



Coding C

Fixing the connectors

Rear panel mount fixing (Panel cut out dimensions page 4)

- Initially place the nut in its cavity. The nut must be placed correctly so that it cannot turn in its cavity.

Rear panel

- Introduce the receptacle by the rear panel and tighten the 2 screws (washers can be added).
  The recommended tightening torque is: 1.7N.m maxi with M3 stainless steel screws.

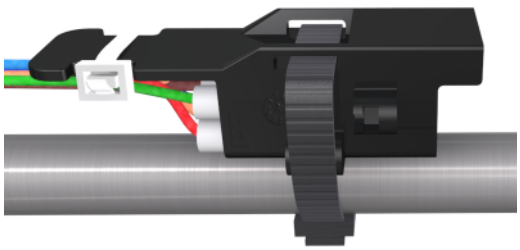
Flat board receptacle fixing (Fixation points defined page 4)

- Place the receptacle on the flat board and tighten the 2 screws (washer can be added).
  The recommended tightening torque is: 1.7N.m maxi with M3 stainless steel.

*For layout 6 cavities: In the particular case on using the connector at a working voltage higher than 220V along with a fixing on a conductive flat board, it will be necessary to insulate the board in order to meet the clearance and creepage distances given in the NFF61-030 standard.

Fixing by ty-rap

- Put the ty-rap through the 2 flat cable supports and tighten the receptacle against its panel (The locking system side should not be against the panel in order to keep the possibility to unmate the plug easily).



Mated pair

The notice of full implementation is available on request.
An explanatory video is viewable on the railway site.

For further information, visit our website **www.railway-connectors.com**
or contact us at **contactindustry@souriau.com**