

## Fire & Smoke Resistant Connector

The plastic rectangular solution offering an excellent fire and smoke resistance for Railway indoor applications.

- Compliant to railway standards** ■ Tested according to EN 50 467
- Compact design & up to 36 contacts** ■ Ideal for tight space integration & high density contact applications
- Excellent durability** ■ 500 mating / unmating
- Standardization oriented** ■ Compatible with standard AWG16 contacts
- Compliant to fire & smoke requirements** ■ HL3/R22 - HL3/R23 following EN 45 545

## Technical features (Tested according to EN 50 467)

### Mechanical

- **Durability:** 500 mating/unmating
- **Vibrations & shocks:** EN 61 373 Cat.2
- **Keying system:** Positive polarization keys prevent mismatching

### Electrical

- **Current rating per contact:** 13 Amps
- **Operating voltage:** 250 V (according to EN 50-124)
- **Clearance distances (unmated):** > 2.58 mm
- **Withstanding voltage:** 2550 Vac
- **Insulation resistance:** ≥ 5000 MΩ
- **Contacts resistance:** ≤ 2.5 mΩ

### Material

- **Plug & receptacle:** Polyamid

### Environmental

- **Fire resistance, toxicity & smoke opacity:**
  - White version: I3F2 - NFF16101/16102
  - HL3/R23 & HL3/R22 - EN 45545
  - NFPA 130 Compliant
  - PCB receptacle (black): PCB version: I2F3 - NFF16101/16102
  - HL2/R22 & HL3/R22 - EN 45545
- **RoHS:** compliant
- **Operating temperature:** -40°C to +105°C
- **Resistance to fluids:** Gas oil, mineral oil, acid bath, basic bath, following NFF 61 030, oxalic acid
- **Sealing (mated conditions):** IP40 (mated conditions)

## Ordering information

Connector family	SMS SMS	4 36	PDH3 RD3
Number of contacts: 2, 3, 4, 6, 9, 12, 15, 18, 24, 36			

- PDH3 Flame Retardant plug with integrated strain relief hood
- RDH3 Flame Retardant receptacle with integrated strain relief hood
- PD3 Flame Retardant plug without strain relief hood
- RD3 Flame Retardant receptacle without strain relief hood
- R3 Flame Retardant panel mount receptacle

Contacts to be ordered separately

- GE33 Straight boardmount with female PCB contacts
- GE43 Straight boardmount with male PCB contacts
- GE53 Right angle boardmount with female PCB contacts
- GE63 Right angle boardmount with male PCB contacts

PCB contacts included

## Contact layouts



2 contacts AWG 16



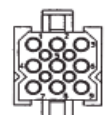
3 contacts AWG 16



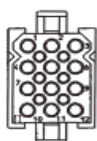
4 contacts AWG 16



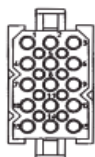
6 contacts AWG 16



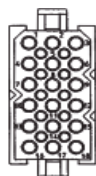
9 contacts AWG 16



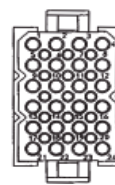
12 contacts AWG 16



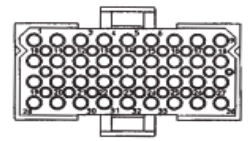
15 contacts AWG 16



18 contacts AWG 16



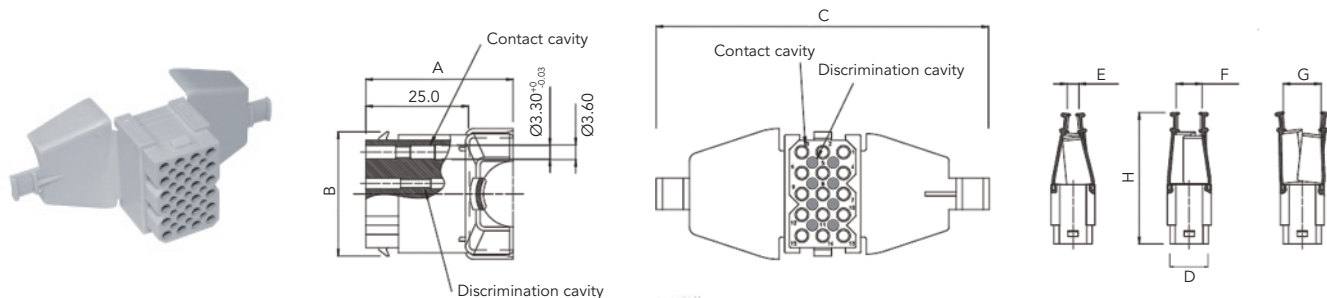
24 contacts AWG 16



36 contacts AWG 16

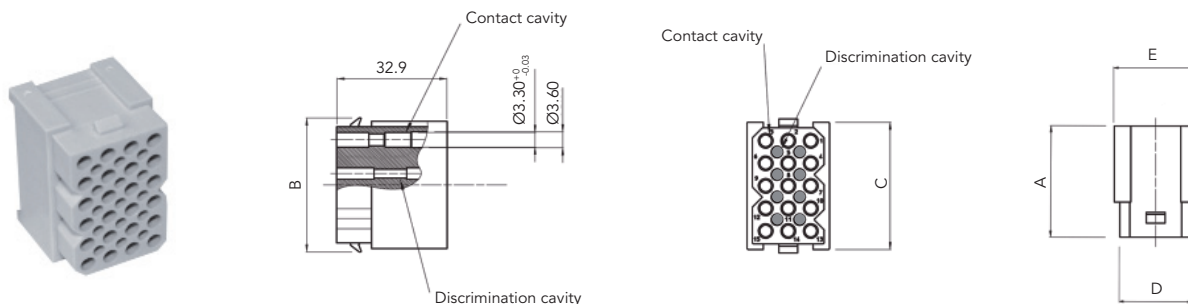
## Receptacle

### Receptacle Quick Mating with integrated strain relief hood (Delivered without contacts)



Part numbers	Number of contact cavities	Number of discrimination cavities	A	B	C	D	E	F	G	H	Cable range
SMS2RDH3	2	0	31.6	9.9	64.8	11.1	0.5	7.4	8.4	49.2	0.5 - 8.4
SMS3RDH3	3	0	35.1		69.0	16.2	0.8	4.1	7.3		0.8 - 7.3
SMS4RDH3	4	0	38.2		74.4	21.2	1.5	5.4	10.0		1.5 - 10.0
SMS6RDH3	6	2	34.6	15.0	72.6	16.2	1.7	6.8	9.2	50.9	1.7 - 9.2
SMS9RDH3	9	4	35.8	20.0	75.3		3.9	9.3	12.3	52.2	3.9 - 14.3
SMS12RDH3	12	6	38.1	25.1	72.0		4.0	10.0	15.0	52.7	4.0 - 15.0
SMS15RDH3	15	8	35.9	30.2	81.3		5.0	11.0	16.2	55.2	5.0 - 16.2
SMS18RDH3	18	10	36.1	35.3			5.8	12.5	20.3		5.8 - 20.3
SMS24RDH3	24	15	39.7		90.4		21.2	7.1	12.4	20.4	57.2
SMS36RDH3	36	24	54.6	25.1	128.0	46.6	8.8	13.0	24.5	63.3	8.8 - 24.5

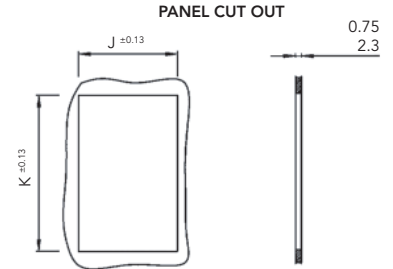
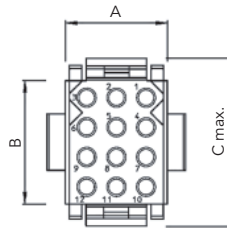
### Receptacle Quick Mating without strain relief hood (Delivered without contacts)



Part numbers	Number of contact cavities	Number of discrimination cavities	A	B	C	D	E
SMS2RD3	2	0	25.0	9.9	8.4	11.1	14.1
SMS3RD3	3	0		9.9	8.4	16.2	18.6
SMS4RD3	4	0		9.9	8.4	21.2	23.7
SMS6RD3	6	2		15.0	13.4	16.2	18.6
SMS9RD3	9	4		20.0	18.5	16.2	18.6
SMS12RD3	12	6		25.1	23.6	16.2	18.6
SMS15RD3	15	8		30.2	28.7	16.2	18.6
SMS18RD3	18	10		35.3	33.8	16.2	18.6
SMS24RD3	24	15		35.3	33.8	21.2	23.7
SMS36RD3	36	24		25.1	23.6	46.6	49.1

## Receptacle

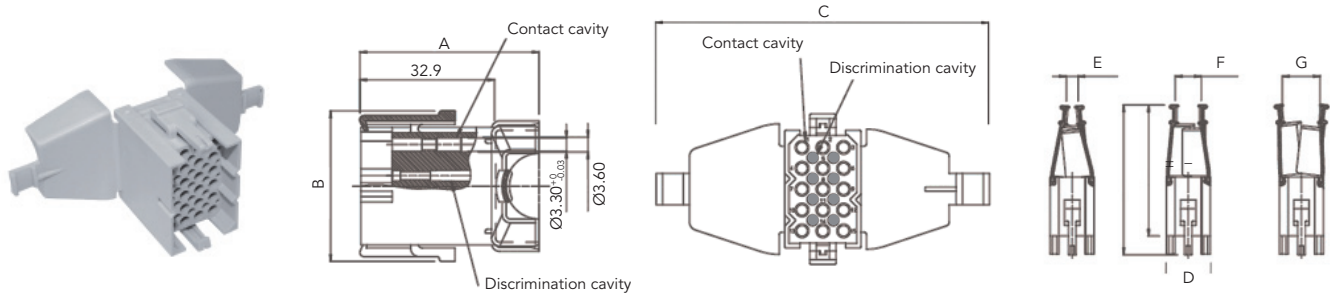
### Panel Quick Mating mount receptacle (Delivered without contacts)



Part numbers	Number of contact cavities	Number of discrimination cavities	A	B	C max.	J <sup>±0.13</sup>	K <sup>±0.13</sup>
SMS2R3	2	0	11.0	5.8	15.2	11.4	11.6
SMS3R3	3	0	16.2			16.5	
SMS4R3	4	0	21.2			21.7	
SMS6R3	6	0	16.2	10.9	20.3	16.5	16.7
SMS9R3	9	0		16.0	25.4		21.6
SMS12R3	12	0		21.1	30.5	16.7	26.7
SMS15R3	15	0		26.2	35.6		31.8
SMS18R3	18	0		21.2	31.2	40.6	21.7
SMS24R3	24	0	26.7				
SMS36R3	36	0	46.6	21.1	30.5	47.1	26.7

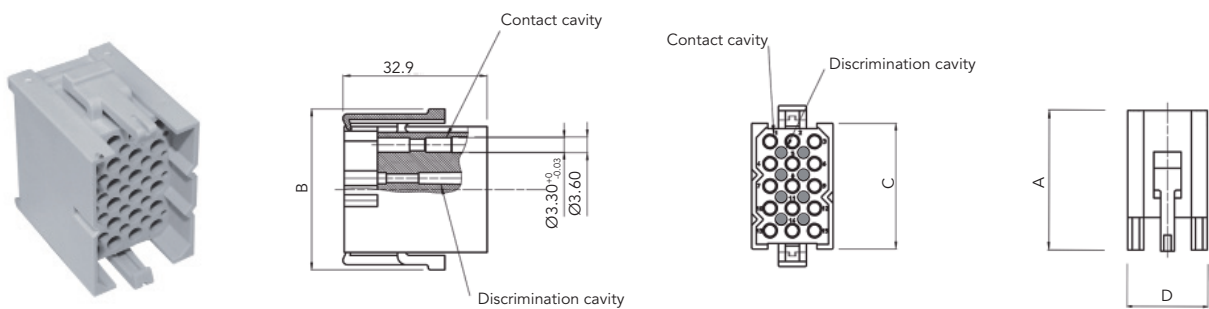
## Plug

### Plug Quick Mating with integrated strain relief hood (Delivered without contacts)



Part numbers	Number of contact cavities	Number of discrimination cavities	A	B	C	D	E	F	G	H	I	Cable range
SMS2PDH3	2	0	39.5	16.4	64.8	14.1	0.5	7.4	8.4	57.1	49.2	0.5 - 8.4
SMS3PDH3	3	0	43.0		69.0	18.6	0.8	4.1	7.3		0.8 - 7.3	
SMS4PDH3	4	0	46.1		74.4	23.7	1.5	5.4	10.0		1.5 - 10.0	
SMS6PDH3	6	2	42.5	21.5	72.6	18.6	1.7	6.8	9.2	58.8	50.9	1.7 - 9.2
SMS9PDH3	9	4	43.7	26.7	75.3		3.9	9.3	12.3	60.1	52.2	3.9 - 14.3
SMS12PDH3	12	6	46.0	31.7	72.0		4.0	10.0	15.0	60.6	52.7	4.0 - 15.0
SMS15PDH3	15	8	43.8	36.7	81.3		5.0	11.0	16.2	63.1	55.2	5.0 - 16.2
SMS18PDH3	18	10	44.0	41.8			5.8	12.5	20.3			5.8 - 20.3
SMS24PDH3	24	15	47.6	41.8	90.4		23.7	7.1	12.4	20.4	65.1	57.2
SMS36PDH3	36	24	62.5		31.7	128.0	49.1	8.8	13.0	24.5	71.2	63.3

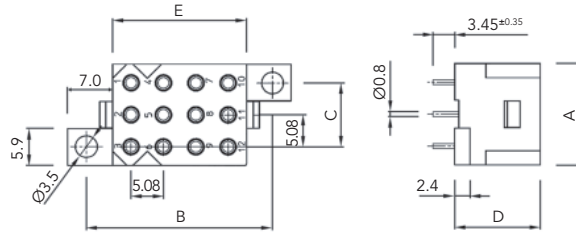
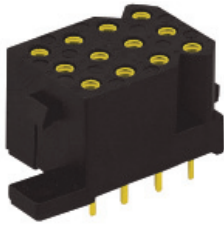
### Plug Quick Mating without strain relief hood (Delivered without contacts)



Part numbers	Number of contact cavities	Number of discrimination cavities	A	B	C	D
SMS2PD3	2	0	32.7	16.4	8.4	14.1
SMS3PD3	3	0		16.4	8.4	18.6
SMS4PD3	4	0		16.4	8.4	23.7
SMS6PD3	6	2		21.5	13.4	18.6
SMS9PD3	9	4		26.7	18.5	18.6
SMS12PD3	12	6		31.7	23.6	18.6
SMS15PD3	15	8		36.7	28.7	18.6
SMS18PD3	18	10		41.8	33.8	18.6
SMS24PD3	24	15		41.8	33.8	23.7
SMS36PD3	36	24	31.7	23.6	49.1	

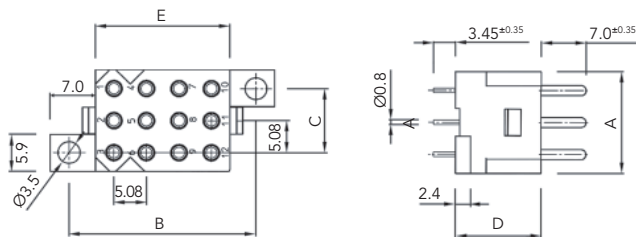
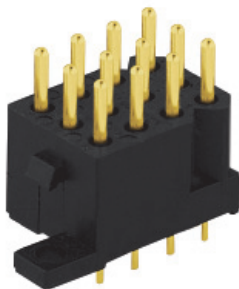
## PCB receptacle

### Straight boardmount receptacle delivered with female PCB contacts (SMS GE33)



Contacts (included)	Part numbers	Number of contact cavities	Number of discrimination cavities	A	B	C	D	E
Female contacts	SMS3GE33	3	0	16.2	14	10.2	13.4	5.9
	SMS6GE33	6	0		19.2			10.9
	SMS9GE33	9	4		24.2			16
	SMS12GE33	12	0		29.2			21.1
	SMS15GE33	15	8		34.3			26.1
	SMS18GE33	18	10		39.4			31.2
	SMS24GE33	24	0	21.2	39.4	15.2	31.2	
	SMS36GE33	36	0	46.5	15.2	54.6	20.9	

### Straight boardmount receptacle delivered with male PCB contacts (SMS GE43)

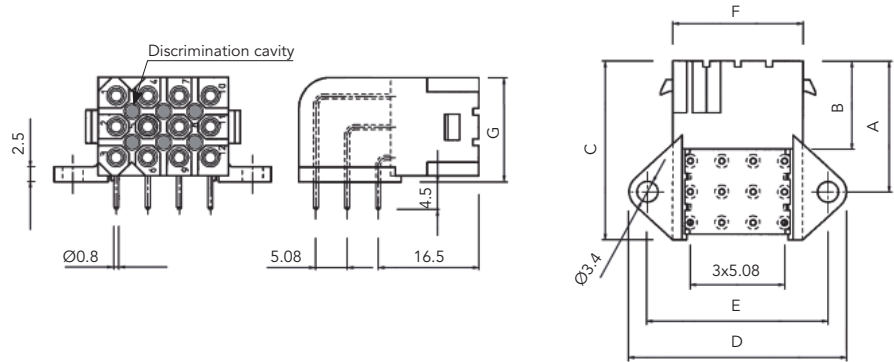
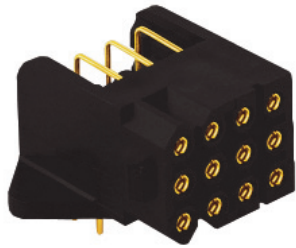


Contacts (included)	Part numbers	Number of contact cavities	Number of discrimination cavities	A	B	C	D	E
Male contacts	SMS3GE43	3	0	16.2	14	10.2	13.4	5.9
	SMS6GE43	6	2		19.2			10.9
	SMS9GE43	9	4		24.2			16
	SMS12GE43	12	0		29.2			21.1
	SMS15GE43	15	8		34.3			26.1
	SMS18GE43	18	10		39.4			31.2
	SMS24GE43	24	0	21.2	39.4	15.2	31.2	
	SMS36GE43	36	0	46.5	15.2	54.6	20.9	

Note : all dimensions are in mm

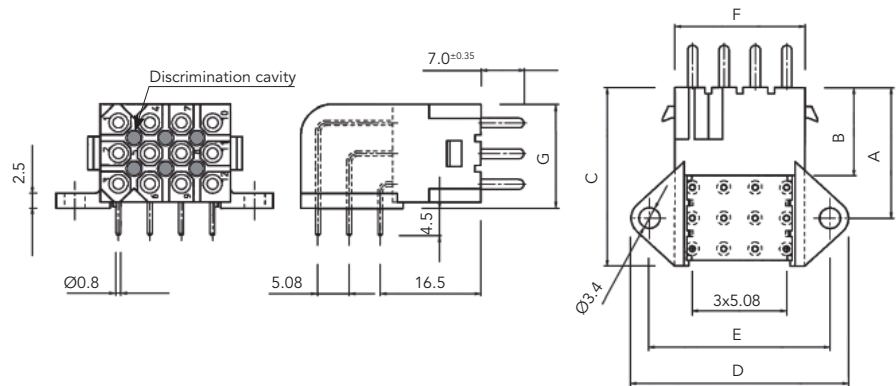
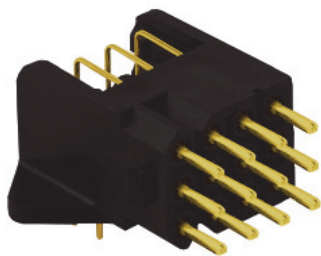
## PCB receptacle

### Right angle boardmount receptacle delivered with female PCB contacts (SMS GE53)



Contacts (included)	Part numbers	Number of contact cavities	Number of discrimination cavities	A	B	C	D	E	F	G
Female contacts	SMS3GE53	3	0	16.5	14.4	20.5	30.2	24.2	16.2	6.8
	SMS6GE53	6	0	19		24.5				11.9
	SMS12GE53	12	6	21.6		29.5	35.2	29.2	21.2	17.2
	SMS18GE53	18	10				45.4	39.4	31.2	

### Right angle boardmount receptacle delivered with male PCB contacts (SMS GE63)



Contacts (included)	Part numbers	Number of contact cavities	Number of discrimination cavities	A	B	C	D	E	F	G
Male contacts	SMS3GE63	3	0	16.5	14.4	20.5	30.2	24.2	16.2	6.8
	SMS6GE63	6	0	19		24.5				11.9
	SMS12GE63	12	6	21.6		29.5	35.2	29.2	21.2	17.2
	SMS18GE63	18	10				45.4	39.4	31.2	

Note : all dimensions are in mm

## Machined contacts #16

Part numbers						Wire size		Max. wire Ø	Max. insul. Ø	Wire strip length
Standard contacts		Longer contacts		Shorter contacts		AWG	mm <sup>2</sup>			
Male	Female	Male	Female	Male	Female					
RM20M12K	RC20M12K	RM20M12GE1K	RC20M12GE1K	RM20M12GE3K	RC20M12GE7K	22-20	0.32-0.52	1.18	2.2	4.8
RM16M23K	RC16M23K	RM16M23GE1K	RC16M23GE1K	RM16M23GE3K	RC16M23GE7K	20-16	0.50-1.50	1.80	3.2	7.1
RM14M50K	RC14M50K	-	-	-	-	16-14	1.5-2.5	2.05		
RM14M30K	RC14M30K	RM14M30GE1K	-	-	RC14M30GE7K	16-14	1.5-2.5	2.28		

Note : all dimensions are in mm

## Tooling for machined contacts #16



Manual crimp pliers	Locator	Selector set-up - Wire section						Extraction tool
MH860 (M22520/7-01)	MH86164G or TP1142	6 0.5 mm <sup>2</sup>	7 0.75 mm <sup>2</sup>	7 1 mm <sup>2</sup>	8 1.5 mm <sup>2</sup>	-	RX2025GE1	
FT8	-	4 0.5 mm <sup>2</sup>	4 0.75 mm <sup>2</sup>	5 1 mm <sup>2</sup>	5 1.5 mm <sup>2</sup>	-		
AF8 (M22520/1-01)	TP1142	-	-	-	-	8 2.5 mm <sup>2</sup>		

Following standard: EN 50306-2

Following standard: EN 50264-3-1

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