

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



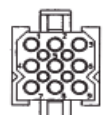
3 contacts AWG 16



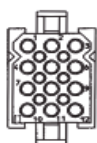
4 contacts AWG 16



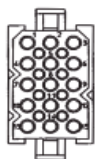
6 contacts AWG 16



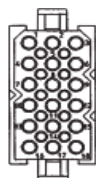
9 contacts AWG 16



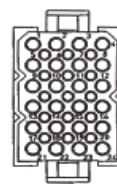
12 contacts AWG 16



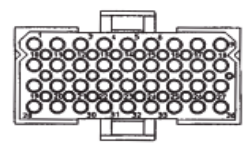
15 contacts AWG 16



18 contacts AWG 16



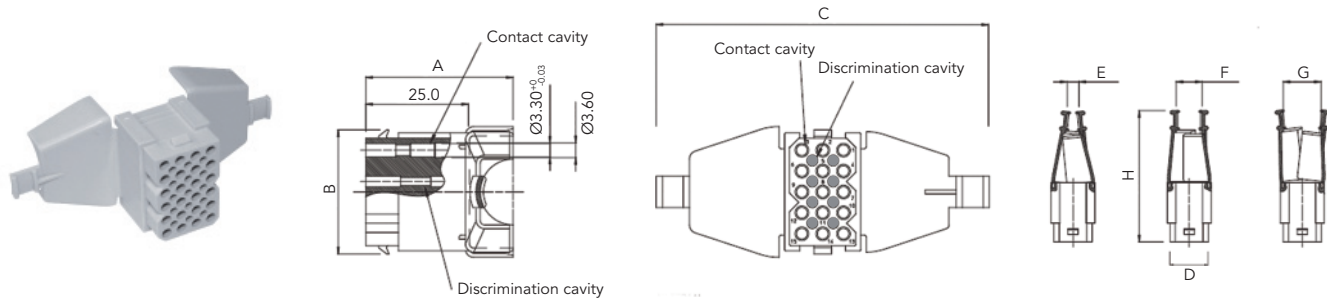
24 contacts AWG 16



36 contacts AWG 16

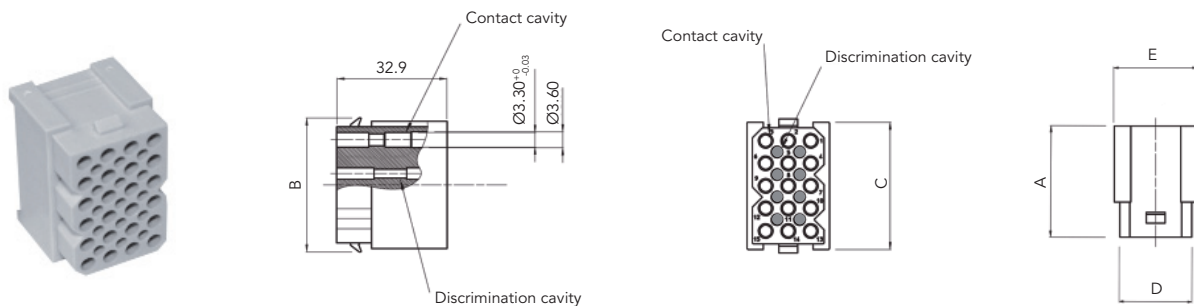
Receptacle

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 | 7.1 - 20.4 |
| SMS36RDH3 | 36 | 24 | 54.6 | 25.1 | 128.0 | 46.6 | 8.8 | 13.0 | 24.5 | 63.3 | 8.8 - 24.5 |

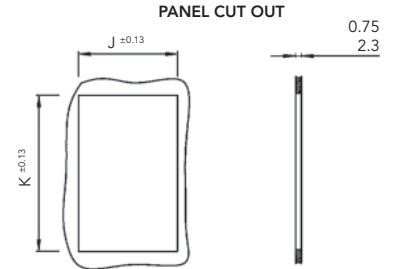
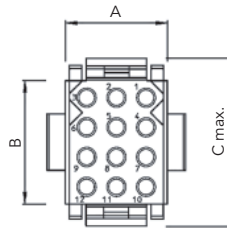
Receptacle Quick Mating without strain relief hood (Delivered without contacts)



| 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

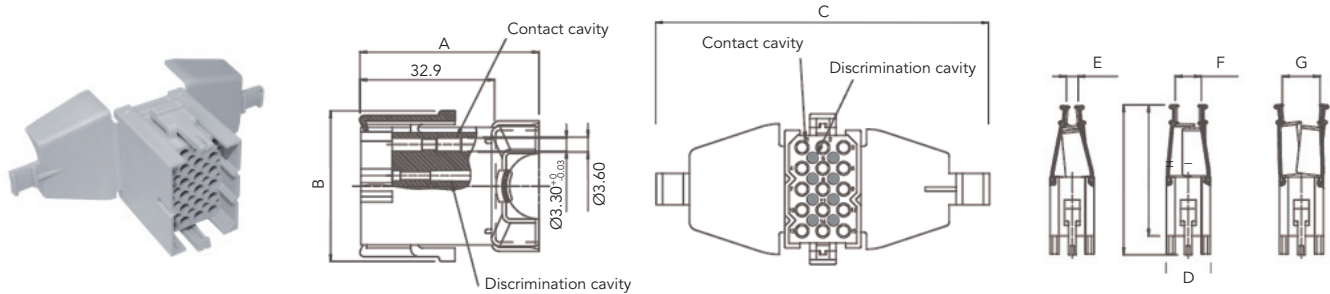
Panel Quick Mating mount receptacle (Delivered without contacts)



| Part numbers | Number of contact cavities | Number of discrimination cavities | A | B | C max. | J ^{±0.13} | K ^{±0.13} |
|--------------|----------------------------|-----------------------------------|------|------|--------|--------------------|--------------------|
| 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 | 21.2 | | | | |
| SMS36R3 | 36 | 0 | 46.6 | 21.1 | 30.5 | 47.1 | 26.7 |

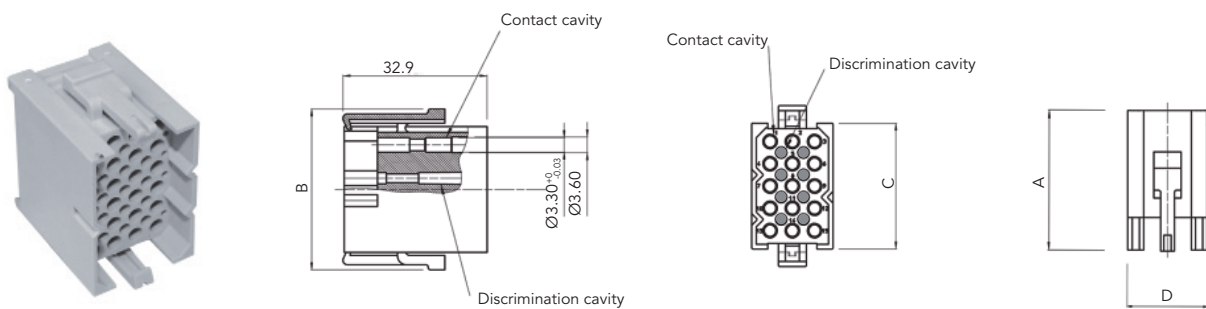
Plug

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 |

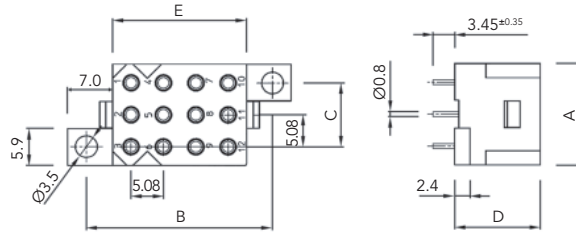
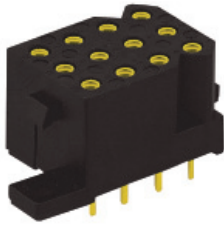
Plug Quick Mating without strain relief hood (Delivered without contacts)



| 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 | |

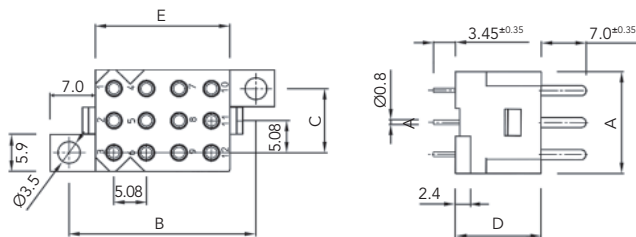
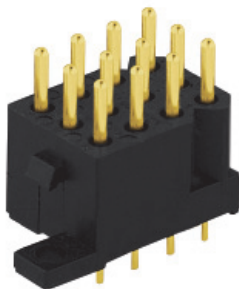
PCB receptacle

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)

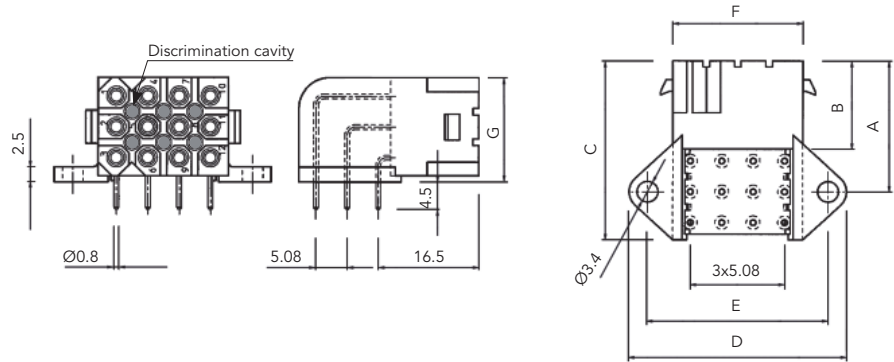
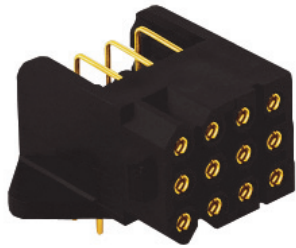


| Contacts (included) | Part numbers | Number of contact cavities | Number of discrimination cavities | A | B | C | D | E |
|---------------------|--------------|----------------------------|-----------------------------------|------|------|------|------|------|
| Male contacts | SMS3GE43 | 3 | 0 | 16.2 | 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

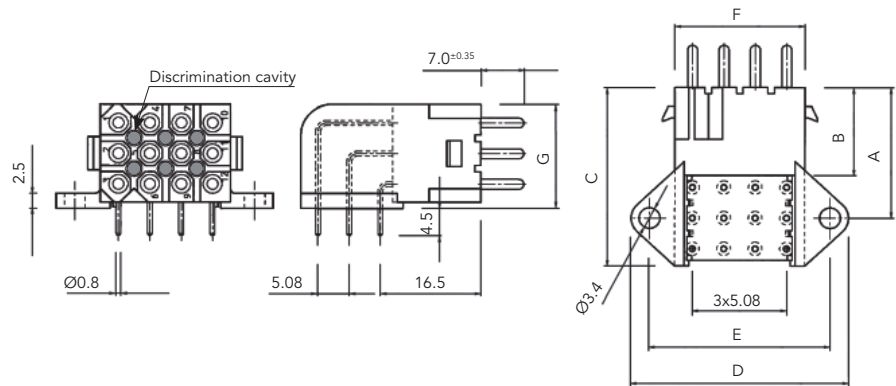
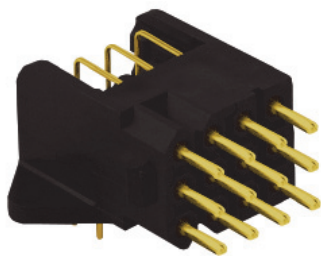
PCB receptacle

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 ² | | | |
| 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 ² | 7 0.75 mm ² | 7 1 mm ² | 8 1.5 mm ² | - | RX2025GE1 | |
| FT8 | - | 4 0.5 mm ² | 4 0.75 mm ² | 5 1 mm ² | 5 1.5 mm ² | - | | |
| AF8 (M22520/1-01) | TP1142 | - | - | - | - | 8 2.5 mm ² | | |

Following standard: EN 50306-2

Following standard: EN 50264-3-1

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