

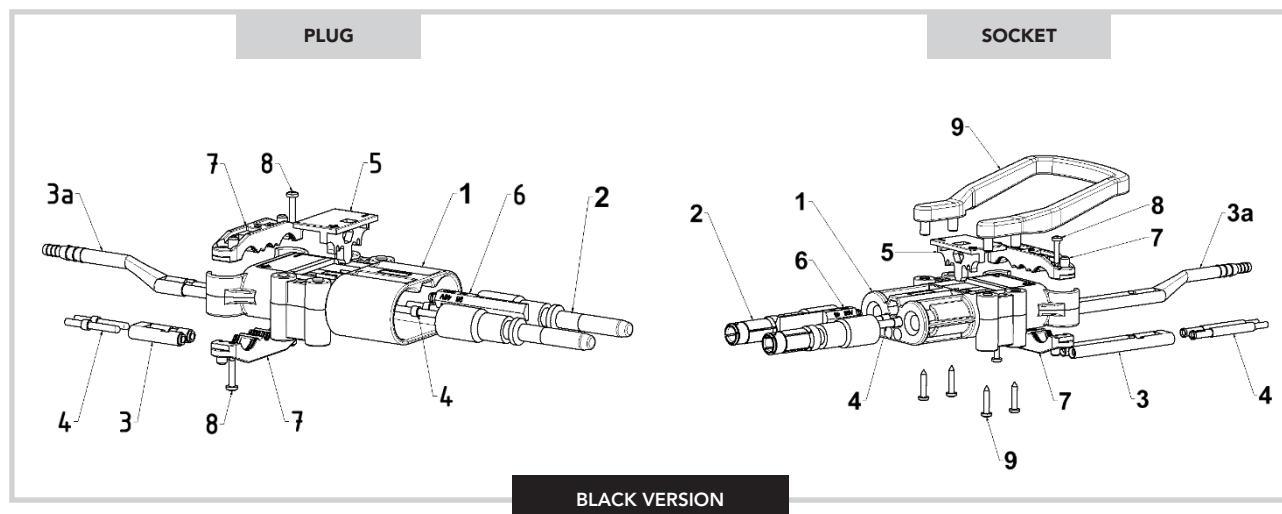
REMA BATTERY CONNECTOR DIN 160



Product features and advantages

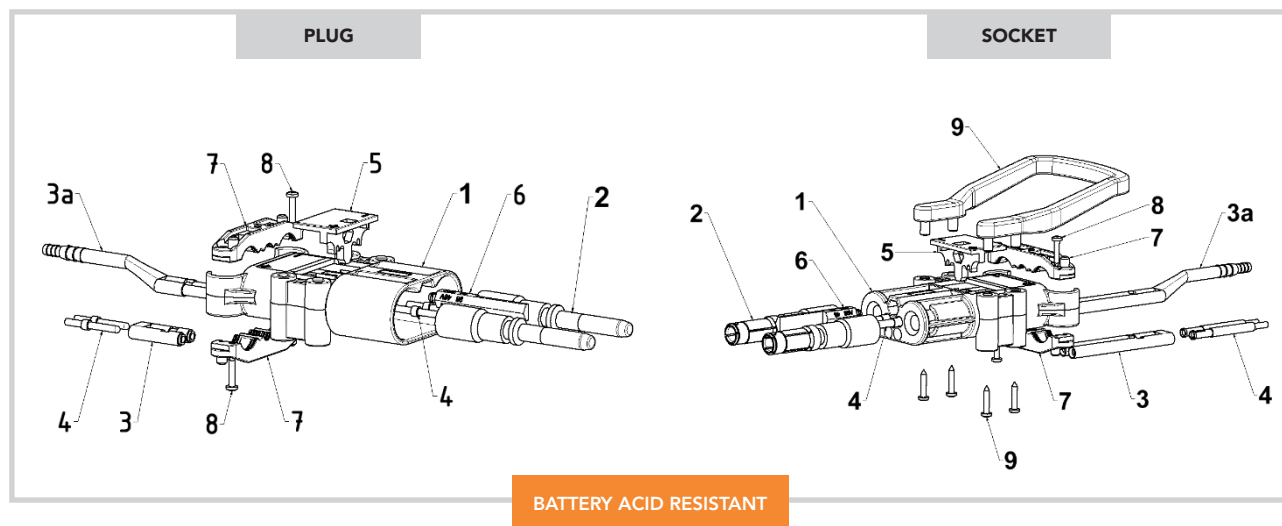
- > Specifically designed for the quick and opportunity charging of large battery capacities
- > Suitable for lead gel accumulators and lithium-ion batteries
- > Corresponds to the DIN VDE 0632-589 and EN 1175-1
- > Spring supported contact system for
 - > optimal contact pressure
 - > high electrical conductivity
- > High-grade contacts made out of pure high conductive Cu-ETP copper with silver plated surface and an anti-friction and tarnish coating ensure
 - > power transition with minimal losses
 - > long life
- > Durable because of acid resistant design
- > Suitable for cable sizes from 16 mm² to 50 mm²
- > Direct crimping without reducing bushing for all cable size
- > Wide range of accessories
 - > different handle shapes
 - > 1 pair of additional auxiliary and 1 pair of pilot contacts
 - > cooling system with air supply through
- > Typical applications
 - > forklift trucks
 - > battery charging systems
 - > sweeper and cleaning devices

1. BASIC STRUCTURE / ORDER NUMBERS



| POS. | DESCRIPTION | PART-NO. PLUG | PART-NO. SOCKET |
|------------------|---------------------------------|---------------|-----------------|
| 1 | Housing >PA-GF<< | 100009 | 100006 |
| 2 | Main contact 50 mm ² | 108591 | 108548 |
| 2 | Main contact 35 mm ² | 108589 | 108546 |
| 2 | Main contact 25 mm ² | 108587 | 108544 |
| 2 | Main contact 16 mm ² | 108583 | 108543 |
| 3 | Adapter for pilot contacts | 100030 | 100029 |
| 3a | Airadapter | 100465 | 100464 |
| 4+4a | Auxiliary- or pilot contact | 102641 | 102714 |
| 5 | Locking part black | 100011 | 100010 |
| 6 ⁽¹⁾ | Coding pin grey (wet + wet) | 100015 | 100015 |
| 6 ⁽¹⁾ | Coding pin green (dry) | 100049 | 100049 |
| 6 ⁽¹⁾ | Coding pin yellow (wet + dry) | 100048 | --- |
| 7 | Cable clamp black (2x) | 100022 | 100022 |
| 8 | Screw (2x) | 102665 | 102665 |
| 9 | Handle black incl. screws | 108600 | 108600 |

(1) see page 8



| POS. | DESCRIPTION | PART-NO. PLUG | PART-NO. SOCKET |
|------------------|---------------------------------|---------------|-----------------|
| 1 | Housing >PP-GF< | 100430 | 100428 |
| 2 | Main contact 50 mm ² | 108591 | 108548 |
| 2 | Main contact 35 mm ² | 108589 | 108546 |
| 2 | Main contact 25 mm ² | 108587 | 108544 |
| 2 | Main contact 16 mm ² | 108583 | 108543 |
| 3 | Adapter for pilot contacts | 100030 | 100029 |
| 3a | Airadapter | 100465 | 100464 |
| 4+4a | Auxiliary- or pilot contact | 102641 | 102714 |
| 5 | Locking part grey | 100432 | 100431 |
| 6 ⁽¹⁾ | Coding pin grey (wet + wet) | 100015 | 100015 |
| 6 ⁽¹⁾ | Coding pin green (dry) | 100049 | 100049 |
| 6 ⁽¹⁾ | Coding pin yellow (wet + dry) | 100048 | --- |
| 7 | Cable clamp grau (2x) | 100433 | 100433 |
| 8 | Screw (2x) | 102665 | 102665 |
| 9 | Handle grey incl. screws | 108879 | 108879 |

(1) see page 8

2. TECHNICAL SPECIFICATIONS

GENERAL

| | |
|---|---|
| > Nominal voltage U_N | 150 V DC |
| > Current rating $I_N^{(1)}$ | 160 A acc. DIN VDE 0623-589 |
| > Test voltage | 2 kV AC acc. EN 1175-1 |
| > Temperature range (incl. self-heating) | -20 °C ... +105 °C -4 °F ... +221 °F |
| > Whole plugging line | app. 40 mm |
| > Plugging line main contact | app. 25 mm |
| > Plugging line auxiliary contact | app. 9 mm |

(1) for cable cross-sections $\geq 35 \text{ mm}^2$

STANDARDS

- > DIN VDE 0623-589
- > DIN EN 1175-1 (VDE 0117-1)
- >  File E226710

MATERIAL HOUSING

| | Standard | >PP-GF30< | >PA-GF30< |
|------------------------------|------------------|-------------------|--------------------|
| > Color | | grey sim. RAL7016 | black sim. RAL9005 |
| > Halogen-free | DIN VDE 0472-815 | yes | yes |
| > UV resistant | | yes | yes |
| > Ozon resistant | | limited | no |
| > Battery acid resistant | EN 1175-1 | yes | no |
| > Comparative Tracking Index | IEC 60112 | 600 V | 550 V |

MATERIAL CONTACTS

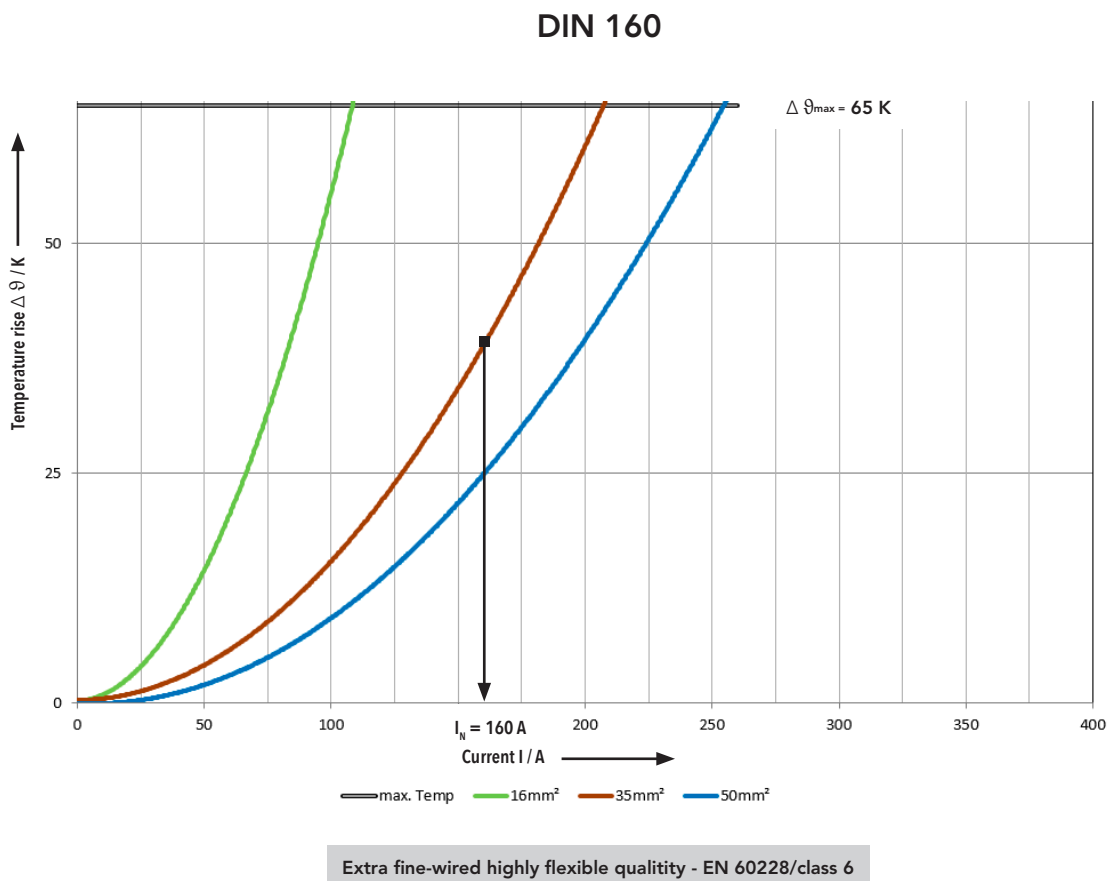
- > Electrolytic high conductive copper Cu-ETP acc. EN 13601 and silver plated surface

3. HEATING OF MAIN CONTACTS

The REMA DIN 160 connector system is designed for optimum performance when used 35 mm² cross section cable according DIN VDE 0623-589.

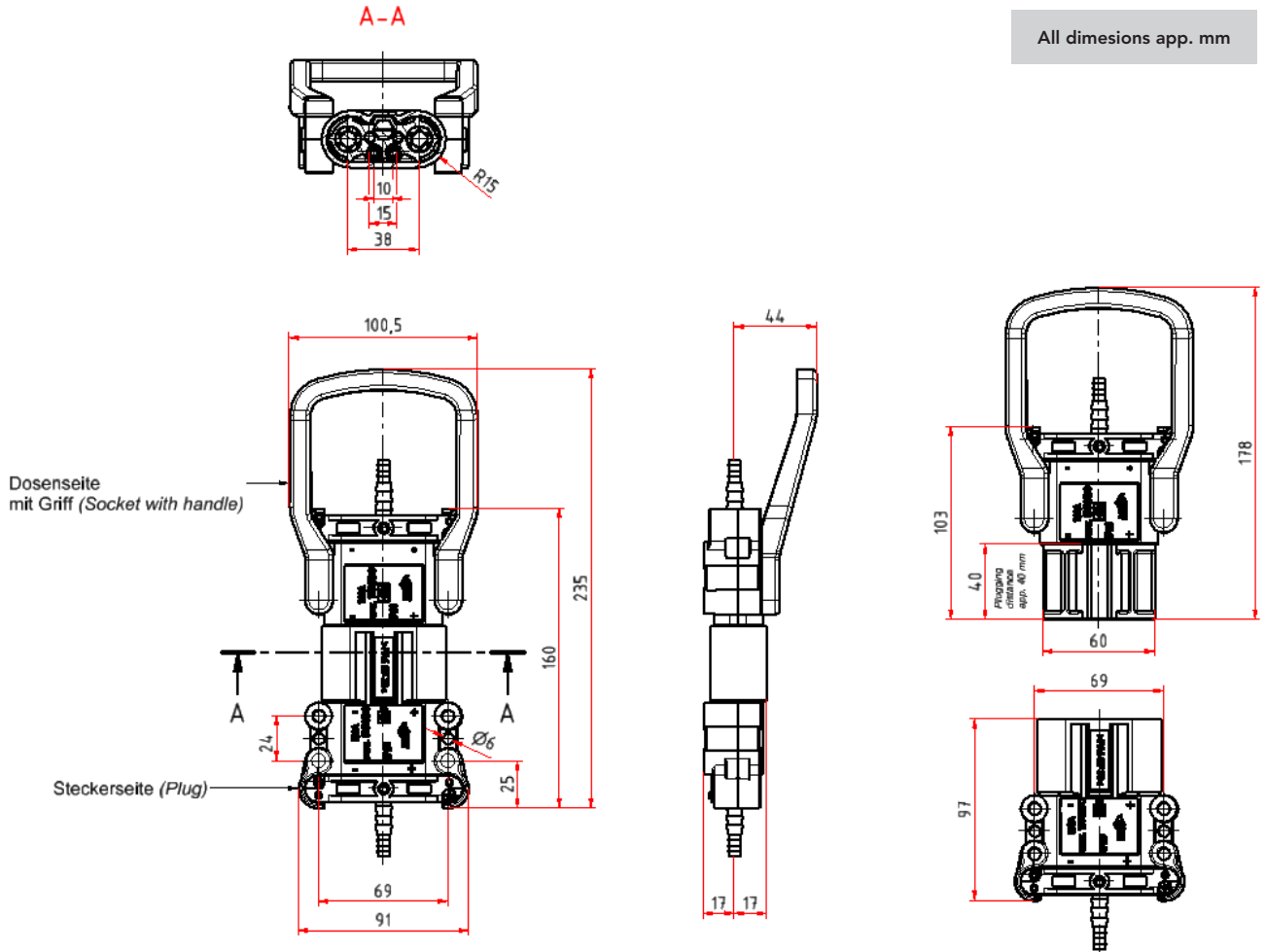
At other cable cross section the nominal operation current I_N will be different.

The following curves are for reference. The actual thermal performance may vary depending upon environmental conditions.



Please contact REMA for additional information concerning DIN 160 Battery Connector system.

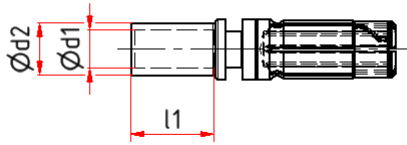
4. DRAWINGS



Plugging distance charts REMA connector DIN 160



Preparation wire acc. DIN VDE 0623-589



| CROSS SECTION [mm ²] | Ø d2 [MM] 0,15 | Ø d1 [mm] ±0,05 | l1 [mm] ±0,30 |
|----------------------------------|-------------------|--------------------|------------------|
| 50 | 14,5 | 11,1 | 20,0 |
| 35 | 12,5 | 9,0 | 20,0 |
| 25 | 11,0 | 8,1 | 20,0 |
| 16 | 8,4 | 6,1 | 20,0 |

5. CODING

The different types of batteries which are used on the vehicle market today (wet, dry or gel batteries), may only be charged with the right charger for this type of battery.

In extreme cases, unapproved combinations of charge system and batteries can lead to the battery destruction.

In addition, only chargers and batteries with the same voltage may be combined.

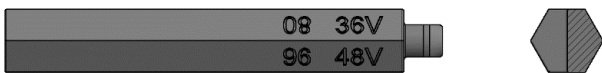
For this reason REMA has developed a specially designed coding system with colored and labelled coding pins. This system allows correct connections and prevent incorrect ones.

The REMA Coding System meets the requirements of DIN VDE 0623-589.

All displayed product versions can only be used for the REMA DIN 80, DIN 160, DIN 320, DIN 640.

Coding pin for wet batteries

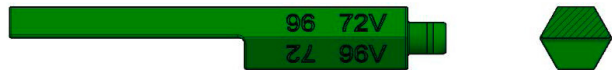
- > **Current rating I:** acc. DIN VDE 0623-589
- > **Color:** Grey RAL7035
- > **Voltage range:** 24 V ... 96 V



Part-No.100049

Coding pin for dry batteries

- > **Current rating I:** acc. DIN VDE 0623-589
- > **Color:** Green RAL6005
- > **Voltage range:** 24 V ... 96 V



Part-No. 100049

Universal coding pin (only for plugs)

for wet/dry batteries

- > **Current rating I:** acc. DIN VDE 0623-589
- > **Color:** Yellow RAL1018
- > **Voltage range:** 24 V ... 96 V



Part-No.100048

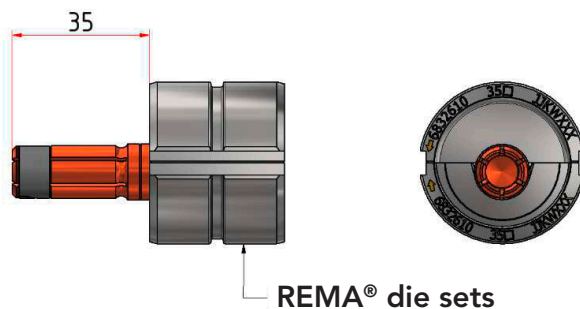
6. DIE SETS

General processing information

- Please only use original REMA die sets. Only those guarantee a secure electrical connection.
- Please actuate the REMA made - die sets always until the end.
- Only process contacts with clean sleeves. The contaminated crimpsleeves increase the contact resistance and may lead to overheating.
- REMA made - die sets are manufactured from hardened tooling steel and have a long life cycle. Nevertheless they must be monitored regularly if under heavy use. REMA is glad to advise you about the service life assessment of your die sets.

REMA offers an electrical and a microscopic analysis of your crimp samples upon request.

- Please always set the die sets centred on the crimp sleeves (see the drawing of that).



Selection of deliverable range of die sets

| CROSS SECTION | TYPE OF DIE SET | DIE SET PART-NO. |
|--------------------|-----------------|------------------|
| 50 mm ² | double deep | 107196 |
| 35 mm ² | double deep | 107191 |
| 25 mm ² | double deep | 107187 |
| 16 mm ² | double deep | 107182 |

7. POWER CABLE

The cables of the REMA DIN 160 High-Power DC Connector System are extra fine-wired flexible copper cables according to EN 60228 / class 6.

All cables listed here have been tested and validated with the die sets in section 6.

| CROSS SECTION | DIE SET PART-NO. | CABLE PART-NO. | CABLE PART-NO. |
|--------------------|------------------|----------------|-------------------|
| 50 mm ² | 107196 | H01N2-D 103528 | REMA Flex® 103130 |
| 35 mm ² | 107191 | H01N2-D 103124 | REMA Flex® 103125 |
| 25 mm ² | 107187 | H01N2-D 103121 | REMA Flex® 103122 |
| 16 mm ² | 107182 | H01N2-D 103117 | REMA Flex® 103117 |

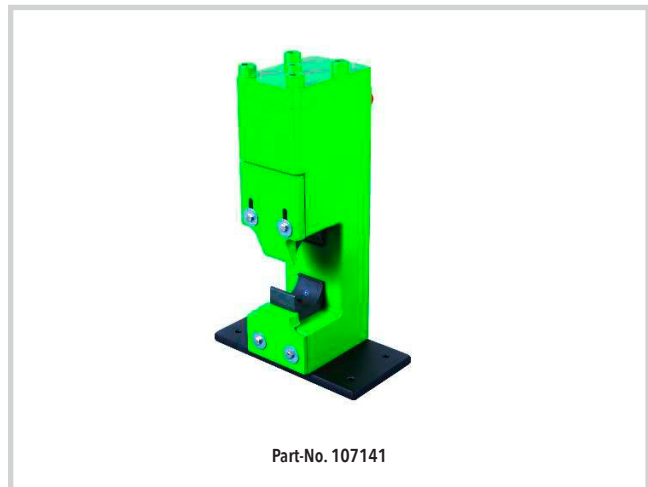
On request we can evaluate your specific cables and make you an offer for a crimping validation.

8. TOOLS AND ACCESSORIES

The double deep die sets set out in section 6 can be easily processed with the following tools and accessories:

Hydraulic Table compression head TPK 130

- > Workshop capable version for frequent use
- > With hydraulic-cylinder for connection to hydraulic pumps
- > Incl. coupling male
- > For double deep die sets from 16 mm² to 120 mm²
- > For total cable diameter up to Ø 38 mm
- > Working pressure: max. 700 bar
- > Force of pressure: 130 kN



Hydraulic compression head CG 130

- > Mobile version for work on site
- > With hydraulic-cylinder for connection to hydraulic pumps
- > Incl. coupling male
- > For double deep die sets from 16 mm² to 120 mm²
- > For total cable diameter up to Ø 38 mm
- > Working pressure: max. 700 bar
- > Force of pressure: 130 kN



Hydraulic compression head H 250 incl. adapter H250/130

- > Mobile version for work on site
- > With hydraulic-cylinder for connection to hydraulic pumps
- > Incl. coupling male
- > For double deep die sets
from 16 mm² to 240 mm²
- > For total cable diameter up to Ø 38 mm
- > Working pressure: max. 700 bar
- > Force of pressure: 250 kN



Electro hydraulic pump EP 2 W

- > Operating voltage 230 V AC | 50 Hz
- > Total compact self-contained model
- > Suitable for hydraulic compression heads
CG 130 and H 250 and more REMA® compressionheads
- > Working pressure: max. 700 bar
- > Mechanical and electrical pressure relief valve
- > With 1,5 m hose incl. female quick coupler



Electro hydraulic pump EP 4 WF

- > Operating voltage 230 V AC und 400 V AC (50Hz)
- > Total compact self-contained model
- > Suitable for hydraulic compression heads CG 130 and H 250 and more REMA compression heads
- > Working pressure: max. 700 bar
- > Mechanical and electrical pressure relief valve
- > Independent electrical control sequence
- > Off switch with emergency off switch as a footswitch
- > Especially for workshop operation and mass production



| VOLTAGE | PART-NO. |
|------------------|----------|
| 230 V AC 50 Hz | 111349 |
| 400 V AC 50 Hz | 111350 |

Hydraulic foot-operated pump FP 3

- > Double piston pump with automatic change-over
- > With pressure relief valve
- > By interchanging preselected pressure hoses



| MODEL | PART-NO. |
|---------------------------|----------|
| With female quick coupler | 111351 |

High pressure hose with coupler



| LENGTH | COATING | CONNECTION | PART-NO. |
|--------|----------------------|------------|----------|
| 2 m | steel (not isolated) | extension | 107101 |
| 3 m | steel (not isolated) | extension | 107102 |
| 4 m | steel (not isolated) | extension | 102353 |
| 5 m | steel (not isolated) | extension | 102354 |

Please contact REMA questions to die sets, tools and other accessories for your REMA Battery Connector DIN 160.

Allow us to advice you.