

# CombiTac direct Main catalog

**CombiTac**

EN



## STÄUBLI ELECTRICAL CONNECTORS

## Long-term solutions – Expert connections



**Stäubli Electrical Connectors is a leading international manufacturer of high-quality electrical contacts and connector systems and solutions for industrial applications. We are part of the Stäubli mechatronics group, the technology leader in connection solutions, robotics and textile machinery.**

Stäubli develops, produces, sells and services products for markets with the highest productivity and safety standards. As recognized specialists, our focus is always on solutions and customers. Many new developments got their start here and are now becoming established as worldwide standards.

Our customers depend on our expertise and our active support, even when dealing with unusual challenges. With Stäubli, you're entering into a long-term partnership built on reliability, dedication, and exceptional quality in both products and services.

#### **Pioneering contact technology for increased efficiency**

The entire Stäubli Electrical Connectors product range meets market expectations for high performance, the highest number of mating cycles, and long-lasting reliability for safe, durable operation. Our proven **MULTILAM technology** is ideal for all types of connections in industrial applications. Customers in the **power transmission and**

**distribution** sector rely on our consistent, loss-free transmission performance in all voltage ranges. The **automotive industry** depends on our high-efficiency connections for spot-welding applications in production lines. Harsh conditions in the **transportation sector** require high vibration resistance, maximum reliability, and compact design. These attributes are vitally important for railway and e-mobility applications. The safety

and reliability of our products are essential for **test and measurement technology.**

In the growing field of **alternative energy**, our products have been setting standards since the 1990s. About half of the solar energy generated worldwide is transmitted through safe, long-lasting, high-performance Stäubli connectors.

# Applications and advantages



**CombiTac modular connectors combine various connection types in a single frame or housing and can be configured according to your exact specifications.**

Depending on your application needs, two types of CombiTac products are available, CombiTac direct and CombiTac uniq.

CombiTac direct is ideal for applications where fast tool-free assembly is required, and where it is necessary to combine electrical signal, power and pneumatic connections up to 10,000 mating cycles. Particularly in applications where a high quantity of modular connectors for low power and signals are needed, CombiTac direct offers significant economic advantages.

CombiTac uniq is designed for more demanding applications that require versatile long-life modular connector solutions, and where combination of power, signal, data, fiber optic, fluid and pneumatic connections are needed.

CombiTac uniq is 100 % customizable to meet exact technical and dimensional specifications, and thanks to the tried and tested MULTILAM Technology, its contacts can reach up to 100,000 mating cycles and current levels up to 300 A.

As a solutions provider, and depending on your business needs, we offer you extensive A-Z support in configuring your own 100 % customized CombiTac modular connector, including cable assembly if required.

This product catalog is dedicated to the CombiTac direct product line. To find out more about CombiTac uniq, please refer to the CombiTac uniq main catalog.

Further information concerning product portfolio, special features as well as exemplary videos can be found at [www.combitac.com](http://www.combitac.com)

# Content

- Page 6**      **The world of CombiTac**
- Plug into more possibilities
  - CombiTac Configurator
- Page 10**     **Ø 10 mm power up to 350 A**
- Contact carrier
  - Contacts
  - For details on  see page 57
- Page 12**     **Ø 7 mm power up to 120 A**
- Contact carrier
  - Contacts
  - For details on  see page 57
- Page 14**     **Ø 3 mm power up to 31 A**
- Contact carrier
  - Contacts
  - For details on  see page 57
- Page 16**     **Ø 1.5 mm Signal up to 14 A**
- Contact carrier
  - Contacts
  - For details on  see page 57
- Page 18**     **Ø 1 mm Signal up to 5 A**
- Contact carrier
  - Contacts
  - For details on  see page 57
- Page 20**     **Last Mate First Break module**
- Module
  - Last Mate First Break contacts
  - For details on  see page 57
- Page 22**     **Pneumatic 4 mm and 6 mm**
- Contact carrier
  - Compressed air couplings
- Page 24**     **Single parts**
- Spacers
  - Frames
  - For details on  see page 57
- Page 28**     **Housings**
- Aluminum housing IP65
  - Aluminum housing IP68
  - Plastic housing IP65
- Page 48**     **Crimping pliers**
- Page 49**     **Appendix**
- Derating diagrams
  - Technical information
  - Safety notes
  - Safety situation for CombiTac connectors
  - Index



# General information

## Changes/provisos

All data, illustrations, and drawings in the catalog have been carefully checked. They are in accordance with our experience to date, but no responsibility can be accepted for errors.

We also reserve the right to make modifications for design and safety reasons. When designing equipment incorporating our components, it is therefore advisable not to rely solely on the data in the catalog but to consult us to make sure this information is up to date. It would be our pleasure to advise you.

## Copyright

The use of this catalog for any other purpose, in whatever form, without our prior written consent is not permitted.

## Symbols



**The assembly instructions MA000 are available for this product**



**Surface Ag**



**Surface Au**

## Abbreviations

CTD	=	CombiTac direct
S	=	Socket
P	=	Pin
C	=	Carrier
C	=	Crimp termination
PE	=	Protective Earth
FP	=	Frame panel
FH	=	Frame housing
AWG	=	American Wire Gauge

## Aluminum DIN housings IP65

S	=	Side cable entry
T	=	Top cable entry
CH	=	Coupler hood
CHG	=	Coupler housing
PW	=	Protective wall
PC	=	Protective cover
SM	=	Surface mount
PM	=	Pedestal mount
PS	=	Park station

## Aluminum housings IP68/69K,

### Plastic housings IP65

S	=	Side
G	=	Top
TG	=	Coupler hood
AG	=	Surface mount
SG	=	Pedestal mount

## RoHS Conformity

**European Directive 2011/65/EU (RoHS 2)**

**Commission Delegated Directive (EU) 2015/863 (RoHS 3)**

For further information please visit our website  
<https://ec.staubli.com/downloads/certificates/rohs>

THE WORLD OF COMBITAC

# Plug into more possibilities

Experience combined with quality and modularity leads to cost-efficient, and durable connection solutions. The modular connector system CombiTac can be easily configured online and adapted to meet the most

demanding requirements. Reliability when you need it. Flexibility, if you want it: The world of CombiTac's modular connector system meets your needs.

## CombiTac direct



Click & connect  
Most assembly-effective  
10,000 mating cycles

The latest generation of modular connectors for power, signal, and pneumatic connections up to 10,000 mating cycles. The new user-friendly, tool-free click-and-connect system allows you to assemble your modular connector system in the most time-saving way.

## CombiTac uniq



100 % customizable  
Highest performance  
100,000 mating cycles

Modular connectors for power, signal, data, pneumatic and fluid connections up to 100,000 mating cycles. Offers the highest possible performance and can be customized to meet exact technical and dimensional specifications.

# CombiTac Configurator

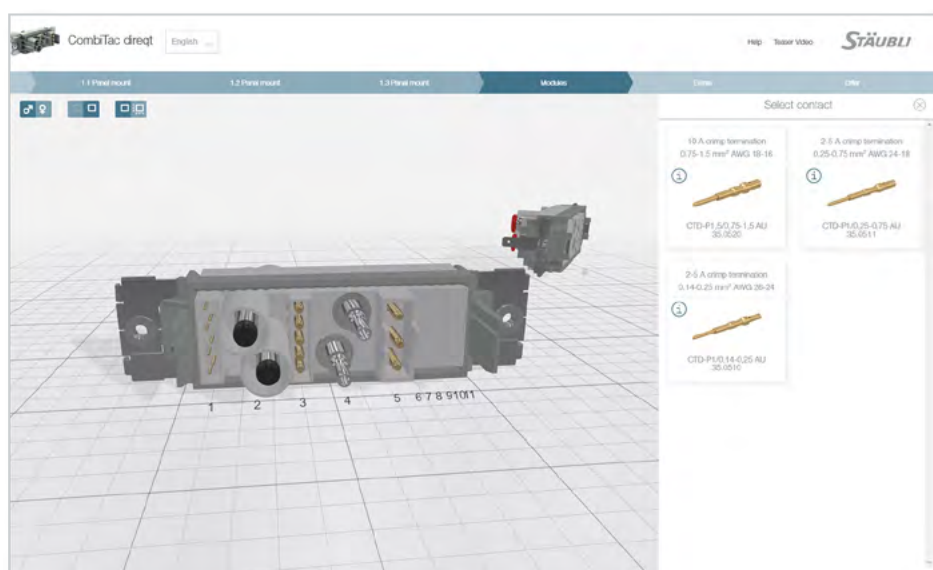
The CombiTac Configurator is a web application that enables you to put together your personalized CombiTac configuration

step by step on various end devices. It also allows you to receive a quotation for your selected CombiTac modular connector.



CombiTac Configurator

<https://configurator.combitac.com>



## COMBITAC DIREQT

# The modular connector system

### DIN coupler hoods

- 6 different sizes
- IP65, IP68/69K
- Aluminum or plastic
- Available in gray or white

### Frames

- 4 sizes for housing or panel mount
- Included in delivery

### CombiTac delivery status

- Contact carrier mounted on frames
- Contacts separately

### Possible connections

- Electrical signal
- Electrical power
- Protective earth (PE)
- Pneumatic

### Cable assembly

- On request

### DIN surface and pedestal mount housing

- 6 different sizes
- Aluminum or plastic
- Available in gray or white

### Mating cycles

Panel mounted: up to 10,000  
 Housing: up to 10,000 depending on type







Ø 10 MM POWER UP TO 350 A

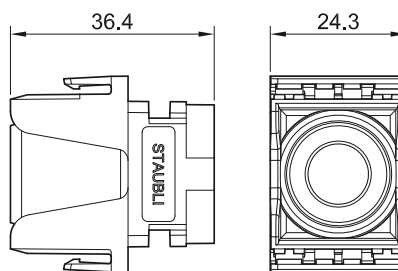
# Contact carrier CTD-C10-1/...

1-pole contact carriers for 10 mm power contacts.

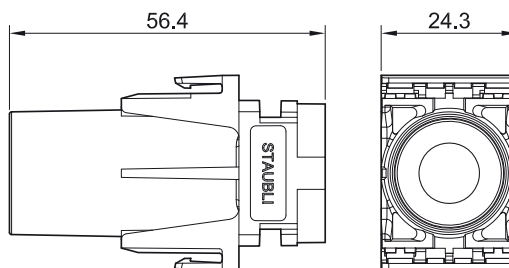
**Features:**

- Tool-free insertion in frames
- Quick removal with standard flat screw-driver
- Railway-compliant material
- Resistance to shock and vibrations
- Coded carriers for correct insertion

**CTD-C10-1/S**



**CTD-C10-1/P**



Order No.	Type	Description
35.4101	CTD-C10-1/S	Socket carrier
35.4100	CTD-C10-1/P	Pin carrier
35.4109	CTD-RC10	Retaining clip (included with carriers)

Technical data			
Number of poles	1		
Max. voltage RMS pin-to-pin and pin-to-GND <sup>1)</sup>	Pollution degree 1: 1000 V	Pollution degree 2: 1000 V	Pollution degree 3: 500 V
Max voltage Line-to-Neutral for pins energized directly from mains supply <sup>1)</sup>	Overtoltage category I: 1000 V	Overtoltage category II: 1000 V	Overtoltage category III: 600 V
Rated voltage UL	600 V		
Degree of protection (socket and plug front)	IP2X		
Clearances and creepage distance	IEC 60664-1:2020 and UL 1977		
Limiting temperature (IEC 61984:2008), upper lower	+125 °C -40 °C		
Contact carrier material	PA		
Fire behaviour	EN45545-2:2015 (HL2 R22)		



Assembly instructions MA417

[www.staubli.com/electrical](http://www.staubli.com/electrical)

<sup>1)</sup> Voltage levels according to IEC 61984:2008 and IEC 60664-1:2020.





# Ø 10 mm contacts

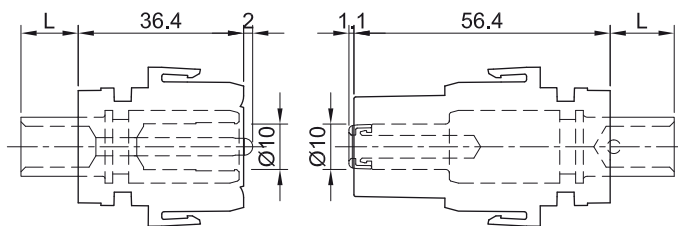
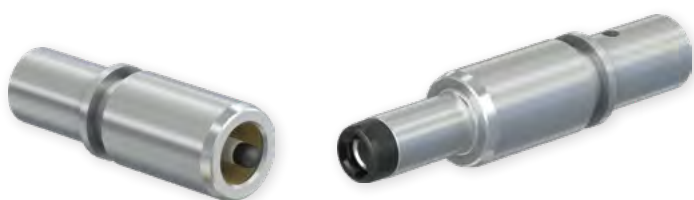
10 mm power contacts up to 350 A.

**Features:**

- Tool-free insertion in carriers
- Quick removal of contacts through removal of holding clip
- MULTILAM Technology in sockets
- IP2X on socket and pin side
- Resistance to shock and vibrations
- Crimp termination (C) for Cu conductors (class 5 and 6) according to IEC 60228:2004

CTD-S10/... AG

CTD-P10/... AG



Order No.	Type	Socket	Pin	Sur- face	Conductor cross section		Rated current <sup>1)</sup> A	Type of termination
					mm <sup>2</sup>	AWG <sup>2)</sup>		
35.0153 35.0553	CTD-S10/35 AG CTD-P10/35 IP2X AG	x	x		35	2	180	C
35.0152 35.0552	CTD-S10/50 AG CTD-P10/50 IP2X AG	x	x		50	1/0	225	C
35.0151 35.0551	CTD-S10/70 AG CTD-P10/70 IP2X AG	x	x		70	2/0	290	C
35.0150 35.0550	CTD-S10/95 AG CTD-P10/95 IP2X AG	x	x		95	4/0	350	C

**Accessories**

35.5656-04321	CTD-10-SRTU/43 <sup>3)</sup>	Shrink tubing 43 mm (not included in delivery)					
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**Technical data**

Nominal-Ø socket/pin	10 mm
Max. sliding force per contact	20 N
Connector resistance	< 40 µΩ
Mating cycles	10,000
Vibrations and shock	IEC 61373:2010 Category 1B

<sup>1)</sup> IEC rated current for fully assembled frames size 4. Wires unbundled, free in air. See pages 49 – 52 for corresponding diagrams for multiple, bundled wires.

<sup>3)</sup> Suitable for UL applications: UL-224 125 °C 600 V, file E48398

<sup>2)</sup> To be validated by the end user.

Ø 7 MM POWER UP TO 120 A

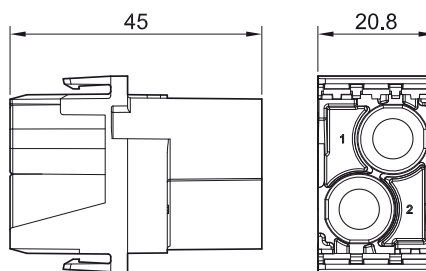
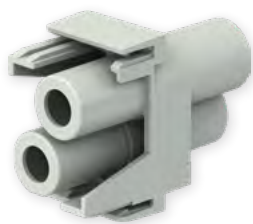
# Contact carrier CTD-C7-2/...

2-pole contact carriers for 7 mm power contacts.

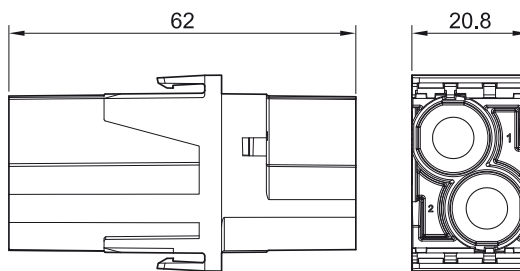
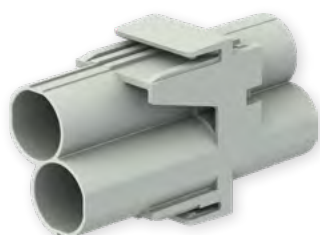
**Features:**

- Tool-free insertion in frames
- Quick removal with standard flat screw-driver
- Railway-compliant material
- Resistance to shock and vibrations
- Coded carriers for correct polarity insertion

**CTD-C7-2 /S**



**CTD-C7-2 /P**



Order No.	Type	Description
35.4071	CTD-C7-2/S	Socket carrier
35.4070	CTD-C7-2/P	Pin carrier
35.4079	CTD-RC7	Retaining clip (included with carriers)

Technical data			
Number of poles	2		
Max. voltage RMS pin-to-pin and pin-to-GND <sup>1)</sup>	Pollution degree 1: 1000 V	Pollution degree 2: 800 V	Pollution degree 3: 300 V
Max voltage Line-to-Neutral for pins energized directly from mains supply <sup>1)</sup>	Overvoltage category I: 1000 V	Overvoltage category II: 600 V	Overvoltage category III: 300 V
Rated voltage UL	600 V		
Degree of protection (socket and plug front)	IP2X		
Clearances and creepage distance	IEC 60664-1:2020 and UL 1977		
Limiting temperature (IEC 61984:2008), upper lower	+125 °C -40 °C		
Contact carrier material	PA		
Fire behaviour	EN45545-2:2015 (HL2 R22)		



Assembly instructions MA417

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<sup>1)</sup> Voltage levels according to IEC 61984:2008 and IEC 60664-1:2020.



# Ø 7 mm contacts

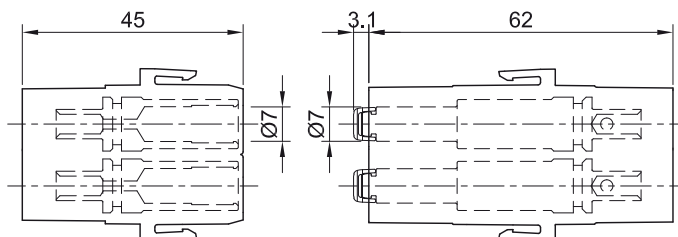
7 mm power contacts up to 120 A.

**Features:**

- Tool-free insertion in carriers
- Quick removal of contacts through removal of holding clip
- IP2X on socket and pin side
- Resistance to shock and vibrations
- Crimp termination (C) for Cu conductors (class 5 and 6) according to IEC 60228:2004

CTD-S7/... AG

CTD-P7/... AG



Order No.	Type	Socket	Pin	Surface	Conductor cross section		Rated current <sup>1)</sup> A	Type of termination
					mm <sup>2</sup>	AWG <sup>2)</sup>		
35.0144 35.0544	CTD-S7/6 AG CTD-P7/6 IP2X AG	x	x		6	10	50	C
35.0143 35.0543	CTD-S7/10 AG CTD-P7/10 IP2X AG	x	x		10	8	70	C
35.0142 35.0542	CTD-S7/16 AG CTD-P7/16 IP2X AG	x	x		16	6	100	C
35.0141 35.0541	CTD-S7/25 AG CTD-P7/25 IP2X AG	x	x		25	4	120	C

Technical data	
Nominal-Ø socket/pin	7 mm
Max. sliding force per contact	20 N
Connector resistance	< 150 µΩ
Mating cycles	10,000
Vibrations and shock	IEC 61373:2010 Category 1B

**Note:**

To guarantee IP2X protection when using 7 mm contacts in configurations which include a housing with side cable entry, you

must add a protective wall. This ensures protection of 7 mm contacts against damage in case housing falls on a hard surface.

<sup>1)</sup> IEC rated current for fully assembled frames size 4. Wires unbundled, free in air. See pages 49 – 52 for corresponding diagrams for multiple, bundled wires.

<sup>2)</sup> To be validated by the end user.

Ø 3 MM POWER UP TO 31 A

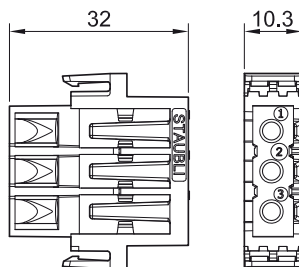
# Contact carrier CTD-C3-3/...

3-pole contact carriers for 3 mm power contacts.

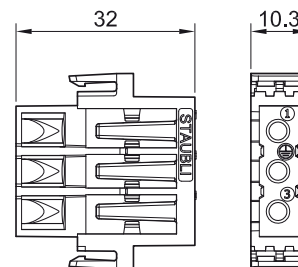
**Features:**

- Tool-free insertion in frames
- Quick removal with standard flat screw-driver
- Railway-compliant material
- Resistance to shock and vibrations
- Coded carriers for correct polarity insertion
- PE version with marking

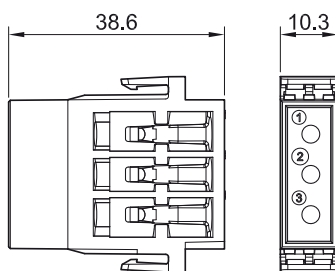
**CTD-C3-3/S**



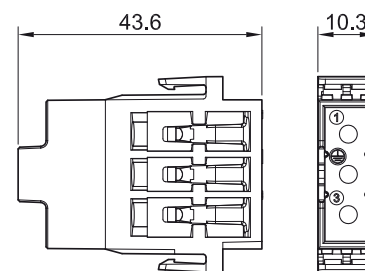
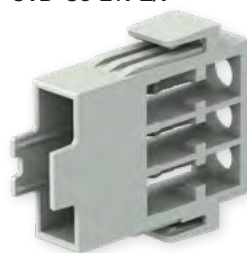
**CTD-C3-2+PE/S**



**CTD-C3-3/P**



**CTD-C3-2+PE/P**



Order No.	Type	Description
35.4031	CTD-C3-3/S	Socket carrier
35.4030	CTD-C3-3/P	Pin carrier
35.4035	CTD-C3-2+PE/S	Socket carrier with ⚡
35.4034	CTD-C3-2+PE/P	Pin carrier with ⚡

Technical data			
Number of poles	3		
Max. voltage RMS pin-to-pin and pin-to-GND <sup>1)</sup>	Pollution degree 1: 1000 V	Pollution degree 2: 600 V	Pollution degree 3: 250 V
Max voltage Line-to-Neutral for pins energized directly from mains supply <sup>1)</sup>	Overtoltage category I: 1000 V	Overtoltage category II: 600 V	Overtoltage category III: 300 V
Rated voltage UL	600 V		
Degree of protection (socket front)	IP2X		
Clearances and creepage distance	IEC 60664-1:2020 and UL 1977		
Limiting temperature (IEC 61984:2008), upper lower	+125 °C -40 °C		
Contact carrier material	PA		
Fire behaviour	EN45545-2:2015 (HL2 R22)		



Assembly instructions MA417

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<sup>1)</sup> Voltage levels according to IEC 61984:2008 and IEC 60664-1:2020.



# Ø 3 mm contacts

3 mm power contacts up to 31 A.

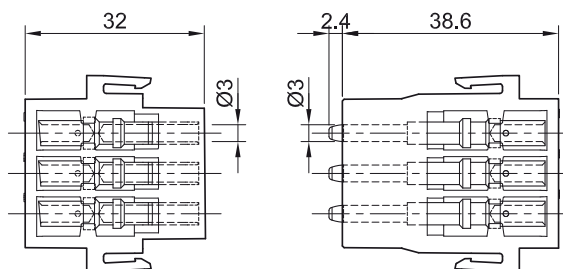
**Features:**

- Tool-free-insertion in carriers
- Quick removal with standard flat screw-driver
- Long pin PE version available
- Resistance to shock and vibrations
- Crimp termination (C) for Cu conductors (class 5 and 6) according to IEC 60228:2004

CTD-S3/2,5-4 AU



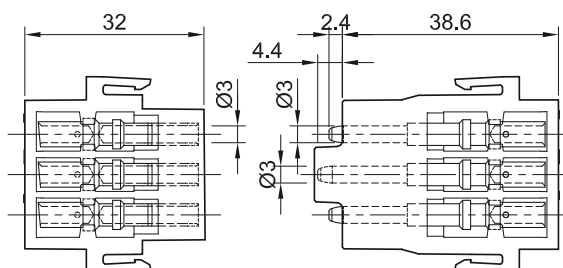
CTD-P3/2,5-4 AU



CTD-S3/2,5-4 AU



CTD-P3/2,5-4/PE AU



Order No.	Type	Socket	Pin	Sur- face	Conductor cross section		Rated current <sup>1)</sup>	Type of termination
					mm <sup>2</sup>	AWG <sup>2)</sup>		
35.0132	CTD-S3/2,5-4 AU	x			2.5	14	23	C
35.0532	CTD-P3/2,5-4 AU		x		4	12	31	C
35.0534	CTD-P3/2,5-4/PE AU		x		2.5	14	– <sup>3)</sup>	C
					4	12		

**Technical data**

Nominal-Ø socket/pin	3 mm
Max. sliding force per contact	4.5 N
Connector resistance	< 1.1 mΩ
Mating cycles	10,000
Vibrations and shock	IEC 61373:2010 Category 1B

<sup>1)</sup> IEC rated current for fully assembled frames size 4. Wires unbundled, free in air. See pages 49 – 52 for corresponding diagrams for multiple, bundled wires.

<sup>2)</sup> To be validated by the end user.

<sup>3)</sup> Short circuit current 3s  
2.5 mm<sup>2</sup>: 157 A  
4 mm<sup>2</sup>: 252 A

Ø 1.5 MM SIGNAL UP TO 14 A

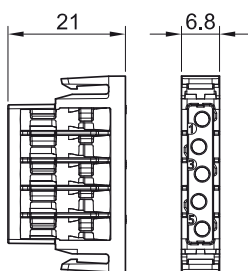
# Contact carrier CTD-C1,5-5/...

5-pole contact carriers for 1.5 mm signal contacts.

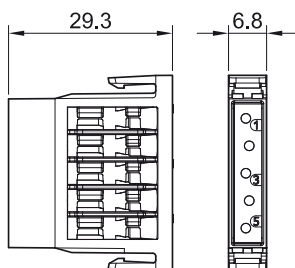
**Features:**

- Tool-free insertion in frames
- Quick removal with standard flat screw-driver
- Railway-compliant material
- Resistance to shock and vibrations
- Coded carriers for correct polarity insertion

**CTD-C1,5-5/S**



**CTD-C1,5-5/P**



Order No.	Type	Description
35.4021	CTD-C1,5-5/S	Socket carrier
35.4020	CTD-C1,5-5/P	Pin carrier

Technical data			
Number of poles	5		
Max. voltage RMS pin-to-pin and pin-to-GND <sup>1)</sup>	Pollution degree 1: 600 V	Pollution degree 2: 400 V	Pollution degree 3: 150 V
Max voltage Line-to-Neutral for pins energized directly from mains supply <sup>1)</sup>	Overvoltage category I: 600 V	Overvoltage category II: 300 V	Overvoltage category III: 150 V
Rated voltage UL	600 V		
Degree of protection (socket front)	IP2X		
Clearances and creepage distance	IEC 60664-1:2020 and UL 1977		
Limiting temperature (IEC 61984:2008), upper lower	+125 °C -40 °C		
Contact carrier material	PA		
Fire behaviour	EN45545-2:2015 (HL2 R22)		



Assembly instructions MA417

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<sup>1)</sup> Voltage levels according to IEC 61984:2008 and IEC 60664-1:2020.





# ∅ 1.5 mm contacts

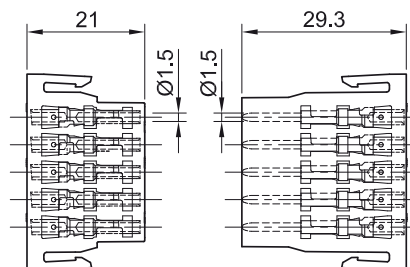
1.5 mm signal contacts up to 14 A.

**Features:**

- Tool-free insertion in carriers
- Quick removal with standard flat screw-driver
- Resistance to shock and vibrations
- Crimp termination (C) for Cu conductors (class 5 and 6) according to IEC 60228:2004

CTD-S1,5/0,75-1,5 AU

CTD-P1,5/0,75-1,5 AU



Order No.	Type	Socket	Pin	Surface	Conductor cross section		Rated current <sup>1)</sup>	Type of termination
					mm <sup>2</sup>	AWG <sup>2)</sup>		
35.0120	CTD-S1,5/0,75-1,5 AU	×			0.75	18	8	
35.0520	CTD-P1,5/0,75-1,5 AU		×		1.0	18	10	
					1.5	16	14	

**Technical data**

Nominal-∅ socket/pin	1.5 mm
Max. sliding force per contact	3.5 N
Connector resistance	< 2 mΩ
Mating cycles	10,000
Vibrations and shock	IEC 61373:2010 Category 1B

<sup>1)</sup> IEC rated current for fully assembled frames size 4. Wires unbundled, free in air. See pages 49 – 52 for corresponding diagrams for multiple, bundled wires.

<sup>2)</sup> To be validated by the end user.

Ø 1 MM SIGNAL UP TO 5 A

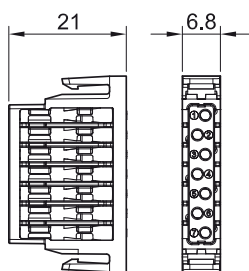
# Contact carrier CTD-C1-7/...

7-pole contact carriers for 1 mm signal contacts.

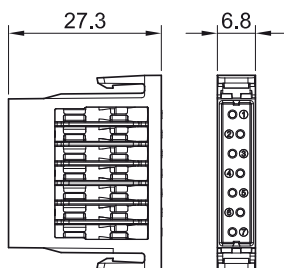
**Features:**

- Tool-free insertion in frames
- Quick removal with standard flat screw-driver
- Railway-compliant material
- Resistance to shock and vibrations
- Coded carriers for correct polarity insertion

**CTD-C1-7/S**



**CTD-C1-7/P**



Order No.	Type	Description
35.4011	CTD-C1-7/S	Socket carrier
35.4010	CTD-C1-7/P	Pin carrier

Technical data			
Number of poles	7		
Max. voltage RMS pin-to-pin and pin-to-GND <sup>1)</sup>	Pollution degree 1: 600 V	Pollution degree 2: 400 V	Pollution degree 3: 150 V
Max voltage Line-to-Neutral for pins energized directly from mains supply <sup>1)</sup>	Overvoltage category I: 600 V	Overvoltage category II: 300 V	Overvoltage category III: 150 V
Rated voltage UL	600 V		
Degree of protection (socket front)	IP2X		
Clearances and creepage distance	IEC 60664-1:2020 and UL 1977		
Limiting temperature (IEC 61984:2008), upper lower	+125 °C -40 °C		
Contact carrier material	PA		
Fire behaviour	EN45545-2:2015 (HL2 R22)		



Assembly instructions MA417

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<sup>1)</sup> Voltage levels according to IEC 61984:2008 and IEC 60664-1:2020.



# ∅ 1 mm contacts

1 mm signal contacts up to 5 A.

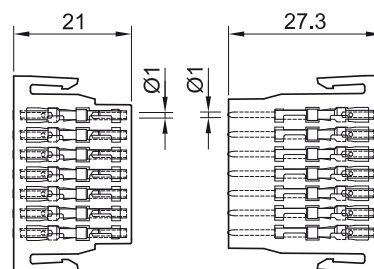
**Features:**

- Tool-free insertion in carriers
- Quick removal with standard flat screw-driver
- Resistance to shock and vibrations
- Crimp termination (C) for Cu conductors (class 5 and 6) according to IEC 60228:2004

CTD-S1/... AU



CTD-P1/... AU



Order No.	Type	Socket	Pin	Sur- face	Conductor cross section		Rated current <sup>1)</sup>	Type of termination
					mm <sup>2</sup>	AWG <sup>2)</sup>		
35.0110	CTD-S1/0,14-0,25 AU	×			0.14	26	2	C
35.0510	CTD-P1/0,14-0,25 AU		×		0.25	24	3	
35.0111	CTD-S1/0,25-0,75 AU	×			0.25	24	3	C
35.0511	CTD-P1/0,25-0,75 AU		×		0.5	20	4	
35.0511	CTD-P1/0,25-0,75 AU		×		0.75	18	5	

**Technical data**

Nominal-∅ socket/pin	1 mm
Max. sliding force per contact	1.5 N
Connector resistance	< 3 mΩ
Mating cycles	10,000
Vibrations and shock	IEC 61373:2010 Category 1B

<sup>1)</sup> IEC rated current for fully assembled frames size 4. Wires unbundled, free in air. See pages 49 – 52 for corresponding diagrams for multiple, bundled wires.

<sup>2)</sup> To be validated by the end user.

# LAST MATE FIRST BREAK MODULE

## Module CTD-LMFB-...

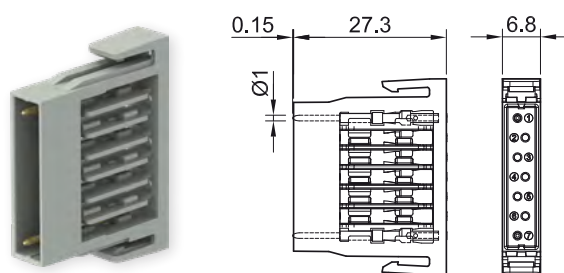
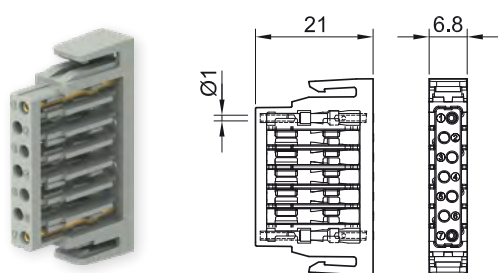
Last Mate First Break (LMFB) contacts are intended for monitoring purposes, and show whether a CombiTac is fully connected or not. Each CombiTac LMFB module consists of two LMFB contacts.

Suitable for panel mount and housing applications.

**Note:**

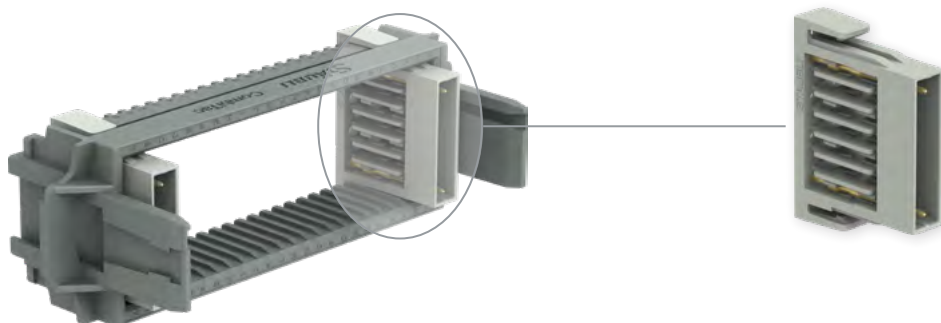
- Size 1 frames require one LMFB module, which can be placed in any position in the frame.
- Size 2 – 4 frames require two LMFB modules which are positioned at the

edge positions of the frame. Empty carrier slots (position 2 – 6) may be used with 1 mm signal contacts (page 19).



Order No.	Type	Description
35.4017	CTD-LMFB-S/0,14-0,25	Socket module
35.4016	CTD-LMFB-P/0,14-0,25	Pin module
35.4019	CTD-LMFB-S/0,25-0,75	Socket module
35.4018	CTD-LMFB-P/0,25-0,75	Pin module

Technical data	
Number of poles	7 (slots 1 and 7 for LMFB contacts)
Limiting temperature (IEC 61984:2008), upper lower	+125 °C -40 °C
Contact carrier material	PA
Fire behaviour	EN45545-2:2015 (HL2 R22)



Assembly instructions MA417

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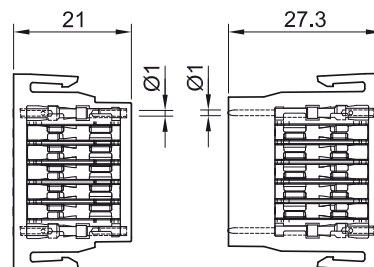


# Last Mate First Break contacts CTD-LMFB...

To be used with contact carrier CTD-C1-7/... for monitoring the connection status of electrical contacts Ø 3 mm – Ø 10 mm.

**Features:**

- Tool-free insertion in carriers
- Quick removal with standard flat screw-driver
- Resistance to shock and vibrations
- Crimp termination (C) for Cu conductors (class 5 and 6) according to IEC 60228:2004



Order No.	Type	Socket	Pin	Surface	Conductor cross section		Type of termination
					mm <sup>2</sup>	AWG	
35.0112	CTD-LMFB-S1/0,14-0,25 AU	×			0,14	26	C
35.0512	CTD-LMFB-P1/0,14-0,25 AU		×		0,25	24	
35.0113	CTD-LMFB-S1/0,25-0,75 AU	×			0,25	24	C
35.0513	CTD-LMFB-P1/0,25-0,75 AU		×		0,5	20	
					0,75	18	

Technical data	
Rated voltage/system voltage	U <sub>DC</sub> 29,5 V
Max. signal current	100 mA
Nominal-Ø socket/pin	1 mm
Max. sliding force	1,5 N
Connector resistance	< 3 mΩ
Mating cycles	10,000
Vibrations and shock	IEC 61373:2010 Category 1B

**Note:**

When using carrier positions 2 – 6 with Ø 1 mm Signal contacts, the technical specifications of carriers and contacts of pages 18 – 19 apply.

PNEUMATIC 4 MM AND 6 MM

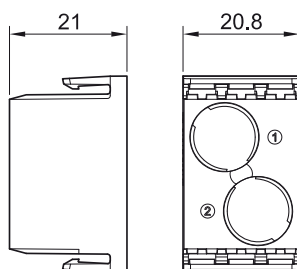
# Contact carrier CTD-CP-2/...

2-pole contact carriers for pneumatic couplings.

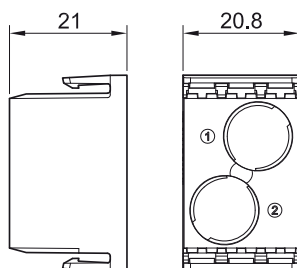
**Features:**

- Tool-free insertion in frames
- Quick removal with standard flat screw-driver
- Railway-compliant material
- Resistance to shock and vibrations
- Coded carriers for correct polarity insertion

**CTD-CP-2/S**



**CTD-CP-2/P**



Order No.	Type	Description
35.4121	CTD-CP-2/S	Socket carrier
35.4120	CTD-CP-2/P	Pin carrier

Technical data	
Number of poles	2
Nominal bore (mm)	03
Max. working pressure (bar)	15
Min. working pressure (mbar)	14
Operating temperatures	-15 °C ... +90 °C
Sealing materials	NBR
Mating cycles	10,000
Contact carrier material	PA
Fire behaviour	EN45545-2:2015 (HL2 R22)



Assembly instructions MA417

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# Compressed air couplings

4 mm and 6 mm pneumatic couplings.

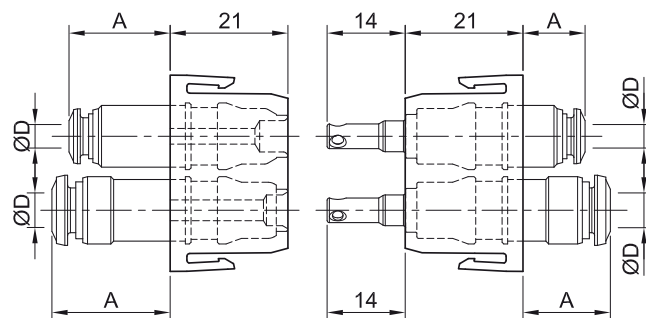
**Features:**

- With or without shut-off valve

CT-B...-RCT03/...



CT-S...-RCT03/...



Order No.	Type	Socket	Plug	Outer-Ø D of the tube		A	Shut-off		Press ring color
				mm	"		without	with	
33.0180	CT-B-RCT03/4	x		4	(5/32)	14	x		●
33.0181	CT-BV-RCT03/4	x		4	(5/32)	14		x	●
33.0580	CT-S-RCT03/4		x	4	(5/32)	7	x		●
33.0182	CT-B-RCT03/6 <sup>1)</sup>	x		6		17	x		●
33.0183	CT-BV-RCT03/6 <sup>1)</sup>	x		6		17		x	●
33.0582	CT-S-RCT03/6 <sup>1)</sup>		x	6		11.5	x		●

<sup>1)</sup> For flow, head loss diagrams, and sliding forces, see page 53.

## SINGLE PARTS

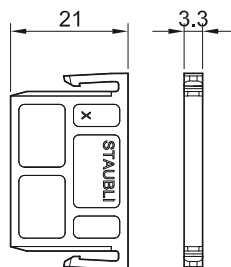
# Spacers

Dips for filling up empty frame spaces.

**Features:**

- Tool-free insertion in frames
- Quick removal with standard flat screw-driver
- Railway-compliant material
- Resistance to shock and vibrations

CTD-DIP3,5



Order No.	Type
35.4135	CTD-DIP3,5

Technical data	
Contact carrier material	PA
Fire behaviour	EN45545-2:2015 (HL2 R22)
Vibrations and shock	IEC 61373:2010 Category 1B

# Frames

4 types of frames for housings or panel mount applications.

**Features:**

- Coded frames for correct polarity during connection (male/female)
- Coded frames for correct polarity carrier insertion

- Grounding connection up to 6 mm<sup>2</sup> earth conductors  
Type of termination: Flat connector termination 6.3 mm x 0.8 mm
- Numbered frames for position identification
- Float mounting panel mount frames for +/- 1 mm misalignment absorption

**CTD-FP.../S**



**CTD-FH.../S**



Panel mounted			Housing assembly		
Order No.	Type	Description	Order No.	Type	Description
35.4291	CTD-FP1/S	Assembled frame socket side	35.4221	CTD-FH1/S	Assembled frame socket side
35.4281	CTD-FP1/P	Assembled frame plug side	35.4201	CTD-FH1/P	Assembled frame plug side
35.4292	CTD-FP2/S	Assembled frame socket side	35.4222	CTD-FH2/S	Assembled frame socket side
35.4282	CTD-FP2/P	Assembled frame plug side	35.4202	CTD-FH2/P	Assembled frame plug side
35.4293	CTD-FP3/S	Assembled frame socket side	35.4223	CTD-FH3/S	Assembled frame socket side
35.4283	CTD-FP3/P	Assembled frame plug side	35.4203	CTD-FH3/P	Assembled frame plug side
35.4294	CTD-FP4/S	Assembled frame socket side	35.4224	CTD-FH4/S	Assembled frame socket side
35.4284	CTD-FP4/P	Assembled frame plug side	35.4204	CTD-FH4/P	Assembled frame plug side

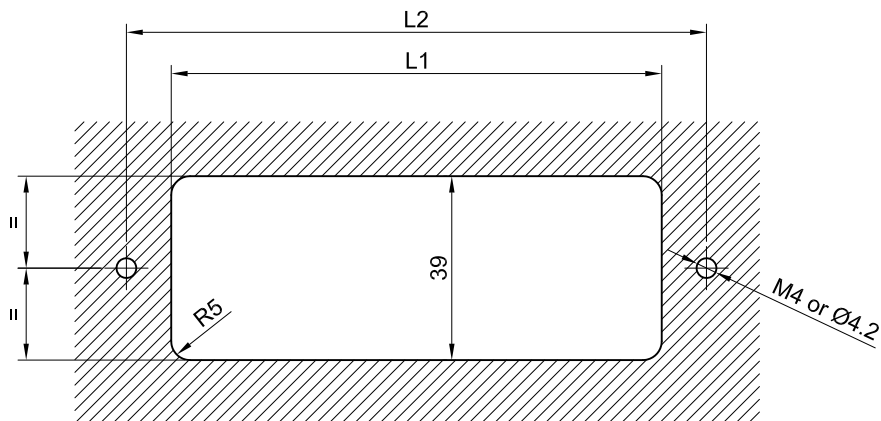
Technical data	
Contact carrier material	PA
Fire behaviour	EN45545-2:2015 (HL2 R22)
Vibrations and shock	IEC 61373:2010 Category 1B



## CALCULATION OF INSTALLATION DIMENSIONS

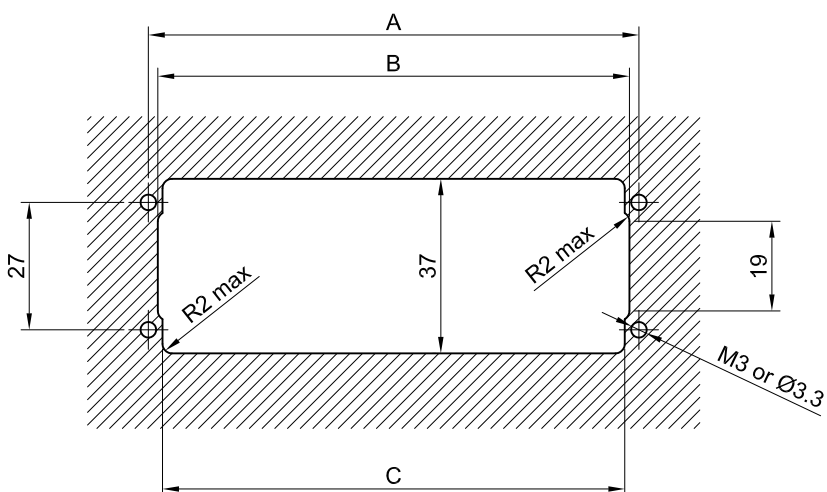
# Drilling plan

for frame panel mounting



Size	Frame size			
	1	2	3	4
L1	44	57	78	104
L2	63	76	97	123

for frame housing assembly

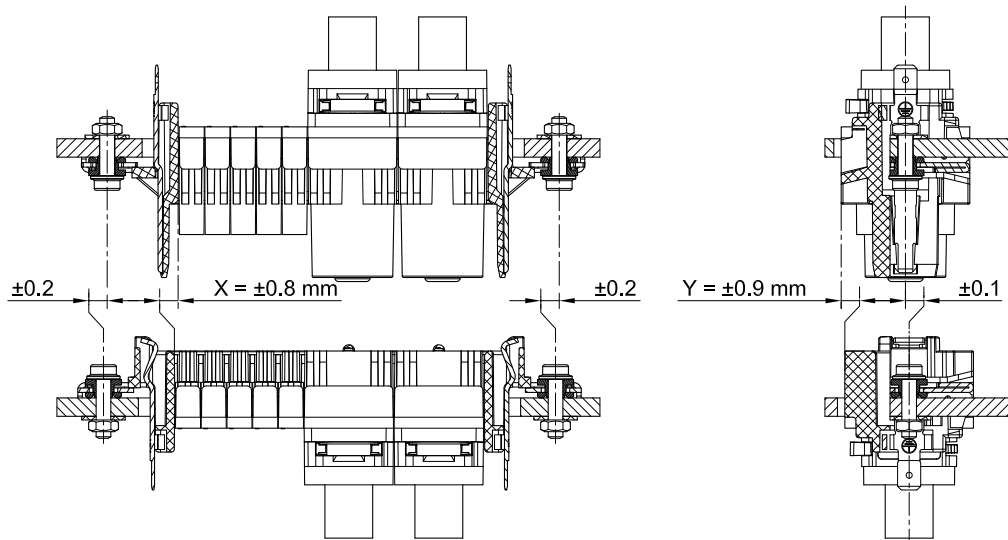


Size	Frame size			
	1	2	3	4
A	44	57	78	104
B	40	53	74	100
C	38	51	72	98

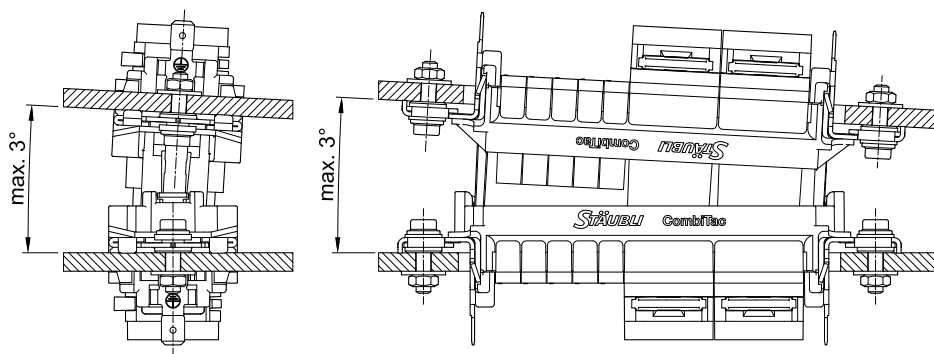
PANEL MOUNTING

Panel mounting

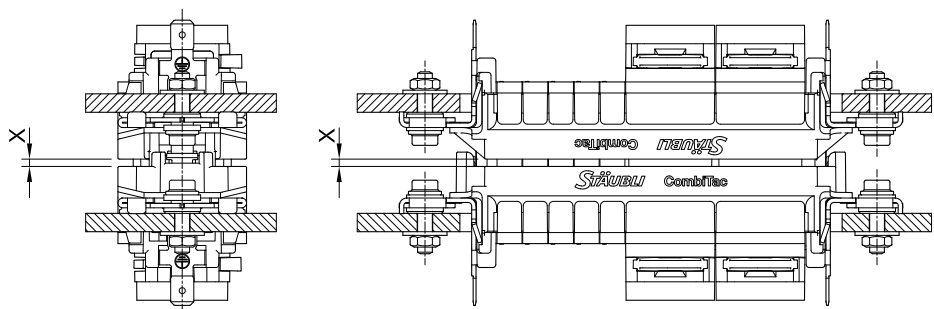
Max. permissible mounting offset



Max. permissible mounting angular misalignment during mating



Max. permissible distance between the contact carriers when mated



Contacts	Sizes X
	max. mm
CTD 10	6
CTD 7	6
CTD 3	6
CTD 1,5	3
CTD 1	2
RCT03	1.5

## ALUMINUM HOUSINGS INTRODUCTION

# Standard DIN housings

Aluminum DIN housings are designed to serve general industrial, healthcare and railway applications.

Available in grey and white color depending on size. Other colors available upon request.

### Features depending on type (see table page 29 for details):

- Up to 10,000 mating cycles
- IP65 and IP67 in mated condition
- 6 coding possibilities
- Quick and easy replacement of sealing
- Resistance to shock and vibrations

- IP2X during connecting/disconnecting process when using protective walls
- Ergonomic locking mechanism

### Benefits:

- Minimum service costs
- Added user safety
- Low maintenance costs
- Reliable solution
- Easy handling

## Coupler hoods/Surface and pedestal mount housings



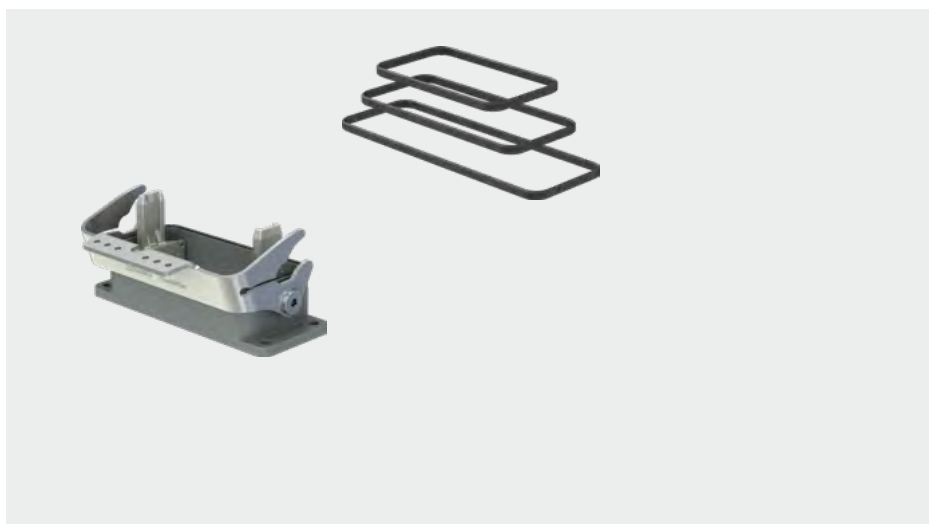
### Coupler hoods

Can be used with a surface or pedestal mount housing. Available with side or top cable entry, with or without protective wall.

### Surface and pedestal mount housings

Both types are used with coupler hoods. The choice of mount housing depends on the cable entry type. Available with or without protective wall or cover.

## Accessories



### Park stations

- For parking coupler hoods when not in use

### Replacement seals (depending on type)

- Available upon request



# Technical data DIN housings

Technical data	
Housing material	Aluminum
Seal material	NBR
Locking mechanism material	Stainless steel
Vibrations and shock	IEC 61373:2010 Category 1B

## Comparison chart of the different housings

Size	IP65	IP67	Mating cycles	Color	Temperature range	Vibrations and shock	Replaceable seal
						IEC 62847:2016	
1	x		5,000	Grey RAL9006	-40 °C to +90 °C		
2	x	x	10,000	Grey RAL7012 White RAL9003	-40 °C to +125 °C short-term operation -40 °C to +90 °C continuous operation	x	x
3	x	x	10,000	Grey RAL7012 White RAL9003	-40 °C to +125 °C short-term operation -40 °C to +90 °C continuous operation	x	x
4	x	x	10,000	Grey RAL7012 White RAL9003	-40 °C to +125 °C short-term operation -40 °C to +90 °C continuous operation	x	x
5	x		5,000	Grey RAL9006	-40 °C to +90 °C		
6	x		5,000	Grey RAL9006	-40 °C to +90 °C		

<sup>1)</sup> Follow maintenance instructions according to MA213

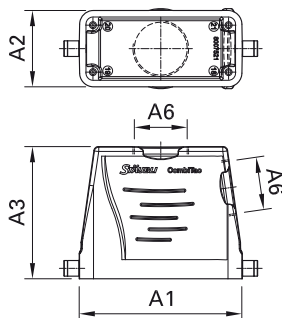
## ALUMINUM HOUSING IP65

# Coupler hood

Coupler hoods can be combined with surface or pedestal mount housing. Available with side or top cable entry.

### Note for sizes 2, 3, 4:

For white housing please add the color code number 29, e.g. 33.2362-29. Other colors available upon request.

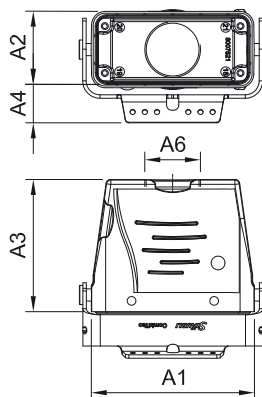


Size	Order No.	Type	Cable entry		Sizes (mm)				Standard color
			Side	Top	A1	A2	A3	A6	
1	33.1551 33.1571	CT-CH1-S CT-CH1-T	x	x	60	43	72	M32	■
2	33.2402 33.2362	CT-CH2-S CT-CH2-T	x	x	73.8	43.9	70	M32	■ 29
3	33.2403 33.2363	CT-CH3-S CT-CH3-T	x	x	93.8	43.9	76	M32	■ 29
4	33.2404 33.2364	CT-CH4-S CT-CH4-T	x	x	120.8	43.9	78	M32	■ 29
5	33.0365 33.0355	CT-CH5-S CT-CH5-T	x	x	95	82.5	79	M40	■
6	33.0366 33.0356	CT-CH6-S CT-CH6-T	x	x	131	89	96	M50	■

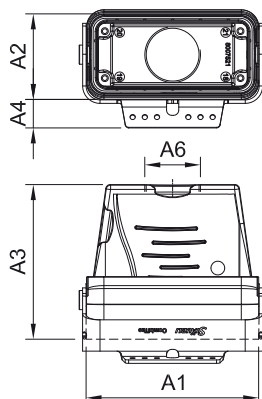
# Coupler housing

Coupler housings can be combined with coupler hoods. Available with top cable entry.

## CT-CHG...-T



## CT-CHG...-T



Size	Order No.	Type	Cable entry	Protective wall	Sizes (mm)					Standard color
					A1	A2	A3	A4	A6	
1	33.1501	CT-CHG1-T	×		60	43	75	20	M32	
2	33.5082 33.5092	CT-CHG2-T CT-CHG2-T/PW	×	×	73	43	74	35	M32	■
3	33.5083 33.5093	CT-CHG3-T CT-CHG3-T/PW	×	×	93.5	43	80	35	M32	■
4	33.5084 33.5094	CT-CHG4-T CT-CHG4-T/PW	×	×	120	43	82	35	M32	■
5	33.0415	CH-CHG5-T	×		95	82.5	82.5	33	M40	



Assembly instructions MA213

[www.staubli.com/electrical](http://www.staubli.com/electrical)

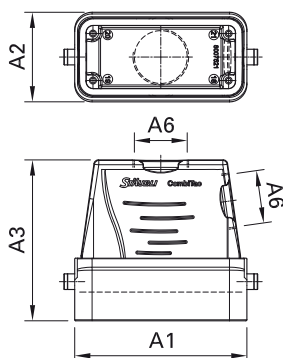
# Coupler hood with protective wall, IP2X

Coupler hoods with protective walls offer additional damage protection to contacts along with IP2X protection during the connecting/disconnecting process. Protective walls are in black.

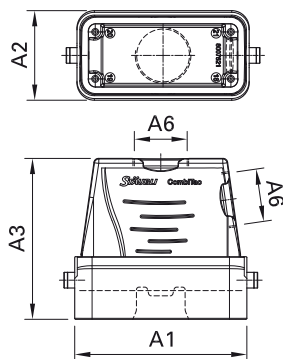
**Note for sizes 2, 3, 4:**






For white housing please add the color code number 29, e.g. 33.2362-**29**. Other colors available upon request.

**CT-CH...PW**








**CT-CH...PW-PC**



Size	Order No.	Type	Cable entry		Sizes (mm)				Standard color
			Side	Top	A1	A2	A3	A6	
2	33.2952	CT-CH2-S/PW	×		78.5	51.5	86.5	M32	 29
	33.2912	CT-CH2-T/PW		×					
3	33.2953	CT-CH3-S/PW	×		99	51.5	92.5	M32	 29
	33.2913	CT-CH3-T/PW		×					
4	33.2954	CT-CH4-S/PW	×		125.2	51.5	94.5	M32	 29
	33.2914	CT-CH4-T/PW		×					
5	33.3255	CT-CH5-S/PW	×		101	91	95.5	M40	
	33.3275	CT-CH5-T/PW		×					
6	33.3256	CT-CH6-S/PW	×		136	98.5	121	M50	
	33.3276	CT-CH6-T/PW		×					

for use with housings that include protective covers

2	33.2972	CT-CH2-S/PW-PC	×		78.5	51.5	86.5	M32	 29
	33.2932	CT-CH2-T/PW-PC		×					
3	33.2973	CT-CH3-S/PW-PC	×		99	51.5	92.5	M32	 29
	33.2933	CT-CH3-T/PW-PC		×					
4	33.2974	CT-CH4-S/PW-PC	×		125.2	51.5	94.5	M32	 29
	33.2934	CT-CH4-T/PW-PC		×					
5	33.3295	CT-CH5-S/PW-PC	×		101	91	95.5	M40	
	33.3225	CT-CH5-T/PW-PC		×					
6	33.3296	CT-CH6-S/PW-PC	×		136	98.5	121	M50	
	33.3226	CT-CH6-T/PW-PC		×					

# Surface mount housing

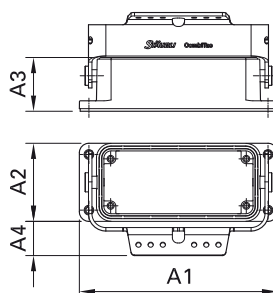
Surface mount housings are used for bottom cable entry. They are combined with coupler hoods and are available with or without protective wall or cover. Protective walls are in black.

Coupler hoods with protective walls of fer additional damage protection to contacts along with IP2X protection during the connecting/disconnecting process.

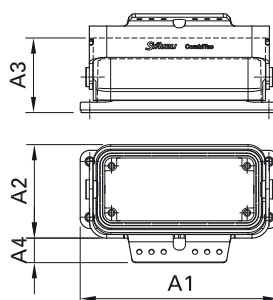
**Note for sizes 2, 3, 4:**

For white housing please add the color code number 29, e.g. 33.2362-29. Other colors available upon request.

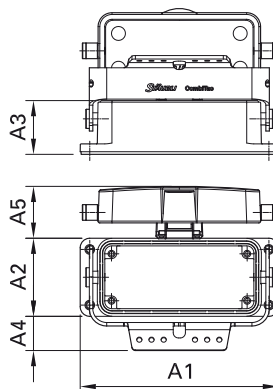
**CT-SM...**



**CT-SM...PW**



**CT-SM...PC**



Size	Order No.	Type	Protective cover	Protective wall	Sizes (mm)					Standard color	
					A1	A2	A3	A4	A5		
1	33.1561	CT-SM1	x		82	43	29	20	-	26.5	
	33.1591	CT-SM1-PC									
2	33.2302	CT-SM2	x	x	94	44.9	28.5	32.9	-	-	29
	33.2852	CT-SM2/PW									
	33.2332	CT-SM2-PC									
3	33.2303	CT-SM3	x	x	114	44.9	28.5	32.9	-	-	29
	33.2853	CT-SM3/PW									
	33.2333	CT-SM3-PC									
4	33.2304	CT-SM4	x	x	141	44.9	28.5	32.9	-	-	29
	33.2854	CT-SM4/PW									
	33.2334	CT-SM4-PC									
5	33.0375	CT-SM5	x	x	124	90	36	27	-	-	
	33.3235	CT-SM5/PW									
	33.0385	CT-SM5-PC									
6	33.0376	CT-SM6	x		165	90	38.5	50	-	25	
	33.0386	CT-SM6-PC									

# Pedestal mount housing

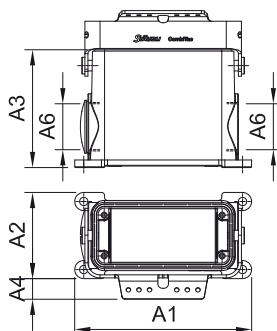
Pedestal mount housings are used for left and/or right side cable entry. They are combined with coupler hoods and are available with or without protective wall or cover. Protective walls are black.

Pedestal mount with protective walls of-fer additional damage protection to con-tacts along with IP2X protection during the connecting/disconnecting process.

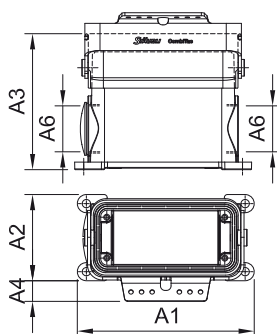
**Note for sizes 2, 3, 4:**

For white housing please add the color code number 29, e.g. 33.2362-29. Other colors available upon request.

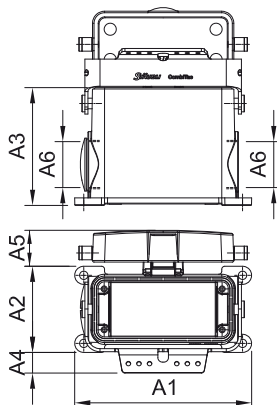
**CT-PM...**









**CT-PM...PW**



**CT-PM...PC**





Size	Order No.	Type	Protective cover	Protective wall	Sizes (mm)						Standard color	
					A1	A2	A3	A4	A5	A6		
1	33.1541	CT-PM1			82	54.5	74	13.5	-	20	M32	
	33.1581	CT-PM1-PC	x									
2	33.2462	CT-PM2		x	94	57	74	26.9	-	-	M32	 29
	33.2872	CT-PM2/PW					86.9					
	33.2702	CT-PM2-PC	x				74					
3	33.2463	CT-PM3		x	117	57	77	26.9	-	-	M32	 29
	33.2873	CT-PM3/PW					90					
	33.2703	CT-PM3-PC	x				77					
4	33.2464	CT-PM4		x	144	57	79	26.9	-	-	M32	 29
	33.2874	CT-PM4/PW					92					
	33.2704	CT-PM4-PC	x				79					
5	33.1025	CT-PM5		x	126	84	78.5	33	-	-	M32	
	33.2085	CT-PM5/PW				92.5	92.8					
	33.1035	CT-PM5-PC	x			84	78.5					
6	33.0396	CT-PM6			140	120	98.5	37	-	10	M40	
	33.0406	CT-PM6-PC	x									

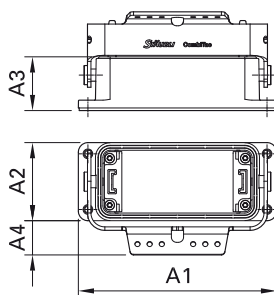
# Park stations

Used for parking coupler hoods when they are not connected to mount housings.

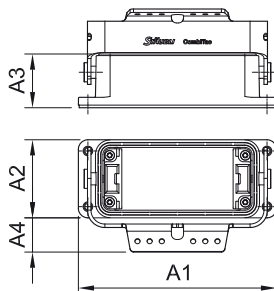
**Note for sizes 2, 3, 4:**

For white housing please add the color code number 29, e.g. 33.2362-29. Other colors available upon request.

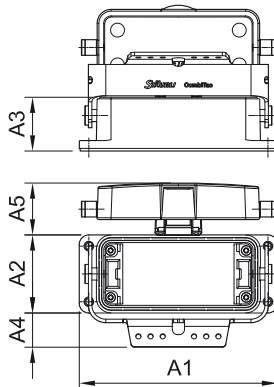
**CT-PS...SM/P**



**CT-PS...SM/S**



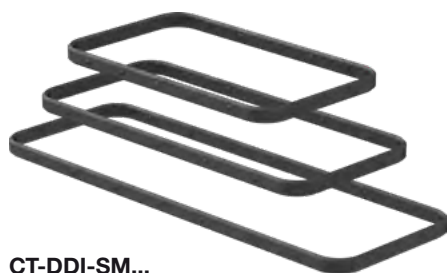
**CT-PS...PC-SM/S**



Size	Order No.	Type	Pin end pieces	Socket end pieces	Protective cover	Sizes (mm)					Standard color
						A1	A2	A3	A4	A5	
1	34.0340	CT-PS1-SM/P	x	x		82	43	29	21		■
	34.0341	CT-PS1-SM/S									
2	33.1802	CT-PS2-SM/P	x	x	x	94	44.9	28.5	32.9	29.8	■ 29
	33.1812	CT-PS2-SM/S									
	33.1832	CT-PS2/PC-SM/S									
3	33.1803	CT-PS3-SM/P	x	x	x	114	44.9	28.5	32.9	29.8	■ 29
	33.1813	CT-PS3-SM/S									
	33.1833	CT-PS3/PC-SM/S									
4	33.1804	CT-PS4-SM/P	x	x	x	141	44.9	28.5	32.9	29.8	■ 29
	33.1814	CT-PS4-SM/S									
	33.1834	CT-PS4/PC-SM/S									
5	34.0354	CT-PS5-SM/P	x	x	x	124	84	36	33	22	■
	34.0355	CT-PS5-SM/S									
	34.0358	CT-PS5/PC-SM/S									
6	34.0356	CT-PS6-SM/P	x	x	x	165	90	38.5	50	25	■
	34.0357	CT-PS6-SM/S									
	34.0359	CT-PS6/PC-SM/S									

## Replacement seals

Replacement housing seals made of NBR can be reordered.



CT-DDI-SM...



CT-PDI-SM...

Size	Order No.	Type	Description
2	33.2782	CT-DDI-SM2	Upper seal
3	33.2783	CT-DDI-SM3	
4	33.2784	CT-DDI-SM4	
2	33.2792	CT-PDI-SM2	
3	33.2793	CT-PDI-SM3	Lower seal
4	33.2794	CT-PDI-SM4	

# Selection of special DIN housings for CombiTac Ø 10 mm contacts

**Step 1:** Select the number of Ø 10 mm poles of your CombiTac connector (e.g. 2 x Ø 10 mm pole)

**Step 3:** Select the appropriate cable gland (e.g. order No. 33.4126 or 33.4122)

**Step 2:** Select the outer insulation diameter of your cable (e.g. 17 mm)

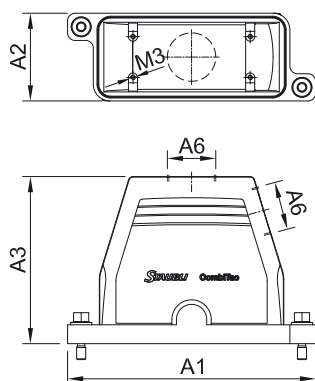
**Step 4:** Select a suitable DIN housing (e.g. size 3, order No. 33.2713)

1 Number of poles	2 For Ø cable mm	3 Cable gland				4 Suitable housing			
		Size M	Order No.	Type	Wrench size max. mm	Size	Order No.	Type	Position of cable glands
1	9.5 – 12.5	25	<b>33.4120</b>	CT-K-VSH M25x9,5-12,5 MS	30	2	<b>33.1571</b>	CT-CH1-T	
	10 – 17		<b>33.4126</b>	CT-K-VSH M25x10-17 MS	28				
	16 – 20.5		<b>33.4122</b>	CT-K-VSH M25x16-20,5 MS	30				
	14 – 17	32	<b>33.4123</b>	CT-K-VSH M32x14-17 MS	36	2	<b>33.2362</b>	CT-CH2-T	
	17 – 21		<b>33.4124</b>	CT-K-VSH M32x17-21 MS					
	21 – 25		<b>33.4125</b>	CT-K-VSH M32x21-25,5 MS					
2 (+/-) (L1/N)	9.5 – 12.5	25	<b>33.4120</b>	CT-K-VSH M25x9,5-12,5 MS	30	3	<b>33.2713</b>	CT-CH3-T/2xM25	
	10 – 17		<b>33.4126</b>	CT-K-VSH M25x10-17 MS	28				
	16 – 20.5		<b>33.4122</b>	CT-K-VSH M25x16-20,5 MS	30				
	14 – 17	32	<b>33.4123</b>	CT-K-VSH M32x14-17 MS	36	4	<b>35.1204</b>	CT-CH4-T/2xM32	
	17 – 21		<b>33.4124</b>	CT-K-VSH M32x17-21 MS					
	21 – 25		<b>33.4125</b>	CT-K-VSH M32x21-25,5 MS					
3 (+/-/PE) (L1/N/PE)	9.5 – 12.5	25	<b>33.4120</b>	CT-K-VSH M25x9,5-12,5 MS	30	4	<b>33.2744</b>	CT-CH4-T/3xM25	
	10 – 17		<b>33.4126</b>	CT-K-VSH M25x10-17 MS	28				
	16 – 20.5		<b>33.4122</b>	CT-K-VSH M25x16-20,5 MS	30				
	14 – 17	32	<b>33.4123</b>	CT-K-VSH M32x14-17 MS	36	6	<b>35.1206</b>	CT-CH6-T/3xM32	
	17 – 21		<b>33.4124</b>	CT-K-VSH M32x17-21 MS					
	21 – 25		<b>33.4125</b>	CT-K-VSH M32x21-25,5 MS					
4 (L1/L2/L3/PE) (L1/L2/L3/N)	9.5 – 12.5	25	<b>33.4120</b>	CT-K-VSH M25x9,5-12,5 MS	30	5	<b>33.3175</b>	CT-CH5-T/4xM25	
	10 – 17		<b>33.4126</b>	CT-K-VSH M25x10-17 MS	28				
	16 – 20.5		<b>33.4122</b>	CT-K-VSH M25x16-20,5 MS	30				
5 (L1/L2/L3/ N/PE)	9.5 – 12.5	25	<b>33.4120</b>	CT-K-VSH M25x9,5-12,5 MS	30	6	<b>33.3186</b>	CT-CH6-T/6xM25 <sup>1)</sup>	
	10 – 17		<b>33.4126</b>	CT-K-VSH M25x10-17 MS	28				
	16 – 20.5		<b>33.4122</b>	CT-K-VSH M25x16-20,5 MS	30				

<sup>1)</sup> Close one gland opening with cap (not provided).

ALUMINUM HOUSING IP68/69K

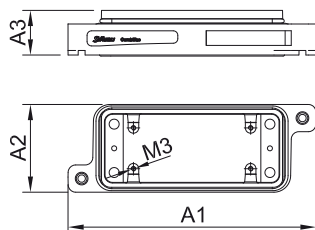
Coupler hood



The all-round contact of the two housing halves of the IP68/69K enclosures provides a 360° shielding against electromagnetic influence according to VG 95373-41.

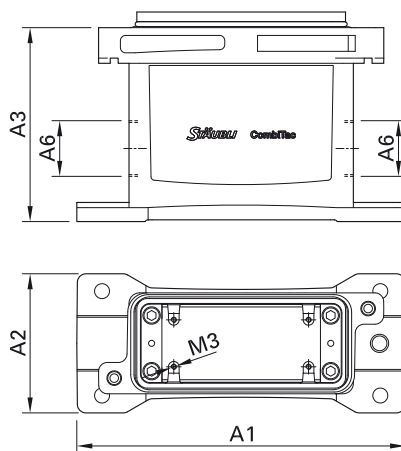
Size	Order No.	Type	Cable entry		Sizes (mm)			
			Side	Top	A1	A2	A3	A6
1	33.6871	CT-TG1-S IP68 HE	×		132	58	100.5	M32
	33.6881	CT-TG1-G IP68 HE		×				
2	33.6872	CT-TG2-S IP68 HE	×		144	58	100.5	M32
	33.6882	CT-TG2-G IP68 HE		×				
3	33.6873	CT-TG3-S IP68 HE	×		164	58	110.5	M40
	33.6883	CT-TG3-G IP68 HE		×				
4	33.6874	CT-TG4-S IP68 HE	×		191	58	110.5	M40
	33.6884	CT-TG4-G IP68 HE		×				

Surface mount housing



Size	Order No.	Type	Sizes (mm)		
			A1	A2	A3
1	33.6851	CT-AG1 IP68 HE	132	58	29.5
2	33.6852	CT-AG2 IP68 HE	144	58	29.5
3	33.6853	CT-AG3 IP68 HE	164	58	29.5
4	33.6854	CT-AG4 IP68 HE	191	58	29.5

# Pedestal mount housing



Size	Order No.	Type	Sizes (mm)			
			A1	A2	A3	A6
1	33.6861	CT-SG1 IP68 HE	156	80	100.5	2×M25
2	33.6862	CT-SG2 IP68 HE	169	80	100.5	2×M32
3	33.6863	CT-SG3 IP68 HE	189	80	111.5	2×M32
4	33.6864	CT-SG4 IP68 HE	216	80	111.5	2×M40

# Protective cap



Size	Order No.	Type
1	33.6891	CT-PC1 IP68 HE
2	33.6892	CT-PC2 IP68 HE
3	33.6893	CT-PC3 IP68 HE
4	33.6894	CT-PC4 IP68 HE

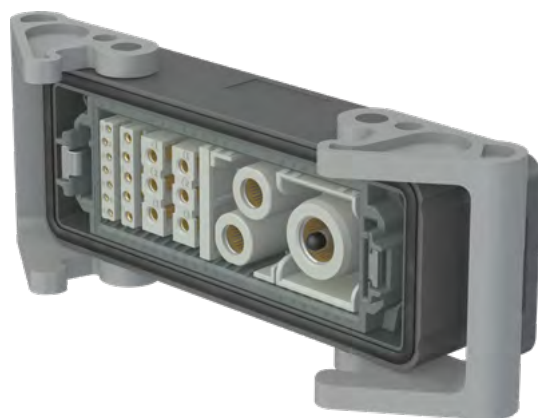
## PLASTIC HOUSING IP65

# Plastic DIN housing

The plastic housing is primarily intended for industrial use or for applications where a high resistance to chemical environmental influences is required.

In addition, the plastic housing is mechanically robust.

As the housing is made of antistatic thermoplastic material, there is no need for additional grounding.



### Technical data

Housing material	Thermoplastic
Housing seal	Elastomer
Locking element	Thermoplastic
Degree of protection mated/locked	IP65

**Plastic housing – Resistance to aggressive media**

	Resistant	Limited resistance
1-Pentanol		x
Alum	x	
Amide, aqueous	x	
Ammonia gas		x
Ammonia, 10 % aqueous solution	x	
Ammonium acetate	x	
Ammonium carbonate	x	
Ammonium chloride	x	
Ammonium nitrate	x	
Ammonium phosphate	x	
Ammonium sulfate	x	
Aniline		x
Asphalt		x
Beer	x	
Borated water	x	
Borax		x
Boric acid, 10 % aqueous solution	x	
Boric acid	x	
Butane gas		x
Butane, liquid		x
Calcium chloride, 10 % aqueous solution	x	
Calcium chloride	x	
Calcium nitrate	x	
Calcium sulfate	x	
Chlorinated lime, diluted	x	
Copper sulfate, 10 % aqueous solution	x	
Cresol acids		x
Cresol solution		x
Cutting oil		x
Cyclohexane		x
Diesel		x
Diisononyl phthalate	x	
Di-Octyl-Phthalate	x	
Diluted glucose	x	
Diluted glycerol	x	
Diluted glycol	x	
Diluted phenol		x
Ethanol, non-denaturized	x	
Ethylene glycol or propylene glycol	x	
Fatty acids	x	
Fruit juices	x	
Gasoline		x

**Plastic housing – Resistance to aggressive media**

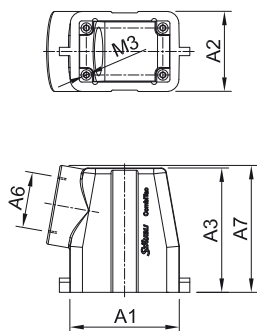
	Resistant	Limited resistance
Glycerol	x	
Grinding oil		x
Gypsum (see calcium sulfate)	x	
Heptane		x
Hexane		x
Hydrogen sulfide		x
Ink	x	
Isopropyl alcohol		x
Lactic acid	x	
Linseed oil	x	
Lubricating oil	x	
Mercury	x	
Methanol, diluted by 50 %		x
Mineral oil	x	
Mineral spirits (Avio)		x
Mineral-based oil	x	
Mothballs		x
Motor oil		x
n-Butanol	x	
Naphthalene		x
Octane		x
Oil IRM 901, 20 °C	x	
Oil IRM 902, 20 °C		x
Oil IRM 903, 20 °C		x
Oil		x
Oleic acid	x	
Oxalic acid	x	
Paraffin oil	x	
Petroleum	x	
Phthalate	x	
Potassium carbonate	x	
Potassium chlorate	x	
Potassium chloride	x	
Potassium chromate		x
Potassium cyanide, aqueous solution	x	
Potassium iodide		x
Potassium nitrate		x
Potassium persulfate		x
Potassium sulfate		x
Seawater	x	
Silicone oil	x	
Soap solution		x



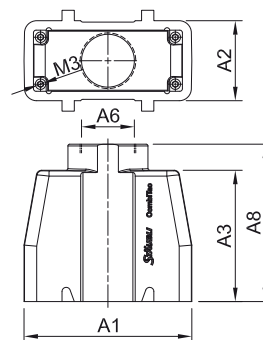
Plastic housing – Resistance to aggressive media		
	Resistant	Limited resistance
Sodium bicarbonate	x	
Sodium carbonate	x	
Sodium chlorate	x	
Sodium chloride (table salt)	x	
Sodium hydrogen sulfate, aqueous solution	x	
Sodium hydroxide 12.5 % (alkaline solution)		x
Sodium nitrate	x	
Sodium nitrite		x
Sodium perborate	x	
Sodium phosphate	x	
Sodium silicate	x	
Sodium sulfate	x	
Sodium sulfide	x	
Sodium thiosulfate (fixing salt/developing film)	x	
Solution for developing photographs	x	
Stearic acid	x	
Succinic acid	x	
Sulfur dioxide		x
Sulfur	x	
Table salt, aqueous solution	x	
Tallow	x	
Tartaric acid	x	
Tar		x
Transformer oil	x	
Tricresyl phosphate	x	
Turpentine substitute		x
Urea, diluted	x	
Urine	x	
Vegetable oil	x	
Water	x	
White spirits (isopropanol and ethanol)		x

# Coupler hood

CT-TG1-S TP



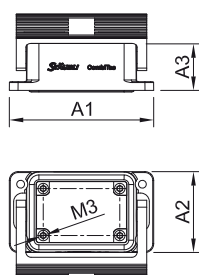
CT-TG...-G TP



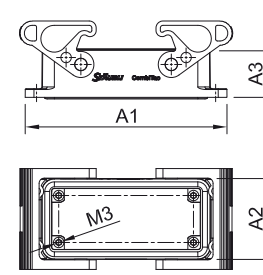
Size	Order No.	Type	Cable entry		Sizes (mm)					
			Side	Top	A1	A2	A3	A6	A7	A8
1 <sup>1)</sup>	33.6011	CT-TG1-S TP	x	x	63	46	71.5	M32	73	86.5
	33.6021	CT-TG1-G TP								
2	33.6012	CT-TG2-S TP	x	x	76	46	71.5	M32	73	86.5
	33.6022	CT-TG2-G TP								
3	33.6013	CT-TG3-S TP	x	x	96.5	46	75.5	M32	79	90.5
	33.6023	CT-TG3-G TP								
4	33.6014	CT-TG4-S TP	x	x	123	46	75.5	M32	79	90.5
	33.6024	CT-TG4-G TP								

# Surface mount housing

CT-AG1 TP



CT-AG...TP

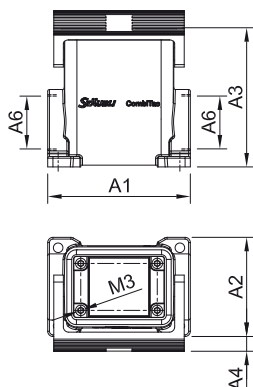


Size	Order No.	Type	Sizes (mm)		
			A1	A2	A3
1 <sup>1)</sup>	33.6041	CT-AG1 TP	83	46	27
2	33.6042	CT-AG2 TP	96	46	27
3	33.6043	CT-AG3 TP	116	46	27
4	33.6044	CT-AG4 TP	143	46	27

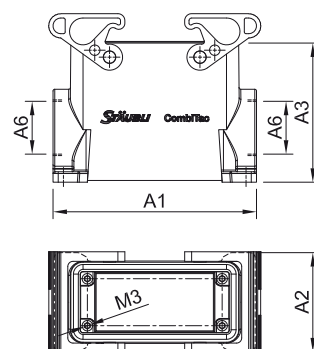
<sup>1)</sup> Size 1: housings only have a single locking device.

# Pedestal mount housing

CT-SG1 TP



CT-SG...TP



Size	Order No.	Type	Sizes (mm)			
			A1	A2	A3	A6
1 <sup>1)</sup>	33.6601	CT-SG1 TP	82	57	73	M32
2	33.6602	CT-SG2 TP	94	57	80	M32
3	33.6603	CT-SG3 TP	117	57	80	M32
4	33.6604	CT-SG4 TP	144	57	80	M32

# Protective cap

CT-SD-AG1 TP



CT-SD-AG... TP



Size	Order No.	Type
1 <sup>1)</sup>	33.6031	CT-SD-AG1 TP
2	33.6032	CT-SD-AG2 TP
3	33.6033	CT-SD-AG3 TP
4	33.6034	CT-SD-AG4 TP

<sup>1)</sup> Size 1: housings only have a single locking device.

CRIMPING PLIERS

Crimping the electric contacts



Pos.	Order No.	Type	Conductor cross section	Description	MA
a	33.3900	CTD-M-CZ		Crimping pliers	MA417 MA419
b	33.3910	MES-CZ-CTD1	0.14 – 0.75 mm <sup>2</sup>	Locator	
c	33.3911	MES-CZ-CTD1,5	0.75 – 1.5 mm <sup>2</sup>	Locator	
d	33.3912	MES-CZ-CTD3	2.5 – 4 mm <sup>2</sup>	Locator	
e	18.3700	M-PZ13		Crimping pliers	MA224
f	18.3701	MES-PZ-TB5/6	6 mm <sup>2</sup>	Crimping die	
g	18.3702	MES-PZ-TB 8/10	10 mm <sup>2</sup>	Crimping die	
h	18.3703	MES-PZ-TB 9/16	16 mm <sup>2</sup>	Crimping die	
i	18.3704	MES-PZ-TB11/25	25 mm <sup>2</sup>	Crimping die	
j	18.3707	MPS-PZ13		Test insert	
k	18.3708	MALU-PZ13		Round test rod	
l	18.3710	M-PZ-T2600		Crimping pliers with case	MA213-01 MA226
m	18.3711	TB8-17	10 mm <sup>2</sup> + 70 mm <sup>2</sup>	Crimping die	
n	18.3712	TB9-13	16 mm <sup>2</sup> + 35 mm <sup>2</sup>	Crimping die	
o	18.3713	TB11-14,5	50 mm <sup>2</sup>	Crimping die	
p	18.3714	TB7-20	95 mm <sup>2</sup>	Crimping die	
q	33.3930	CT-CP		Crimping pliers	MA417
r	33.3932	CT-I-CP6	6 mm <sup>2</sup>	Crimping die	MA420

APPENDIX

# Derating diagrams

The following derating curves are based on measurements according to IEC 60512-5-2:2002.

The measurements were carried out on a fully assembled frame size 4. The wires were unbundled, free in air. A reduction factor of 0.9 (derating) was applied to the measured currents.

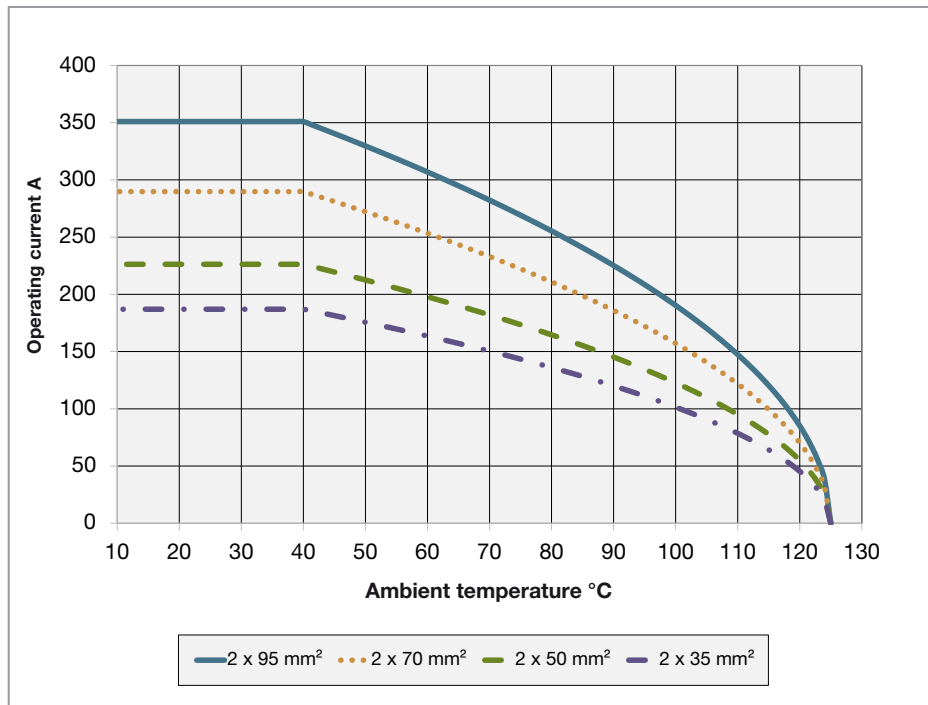
These diagrams show examples of the rated current as a function of the various ambient temperatures up to 125 °C.

The derating curves for several bundled wires from example 2 onwards were created using the conversion factors from IEC 60364-5-52:2009 table B.52.17.

If a CombiTac is used to equip machines, the standard IEC 60204-1:2016 applies.

**Example 1:**

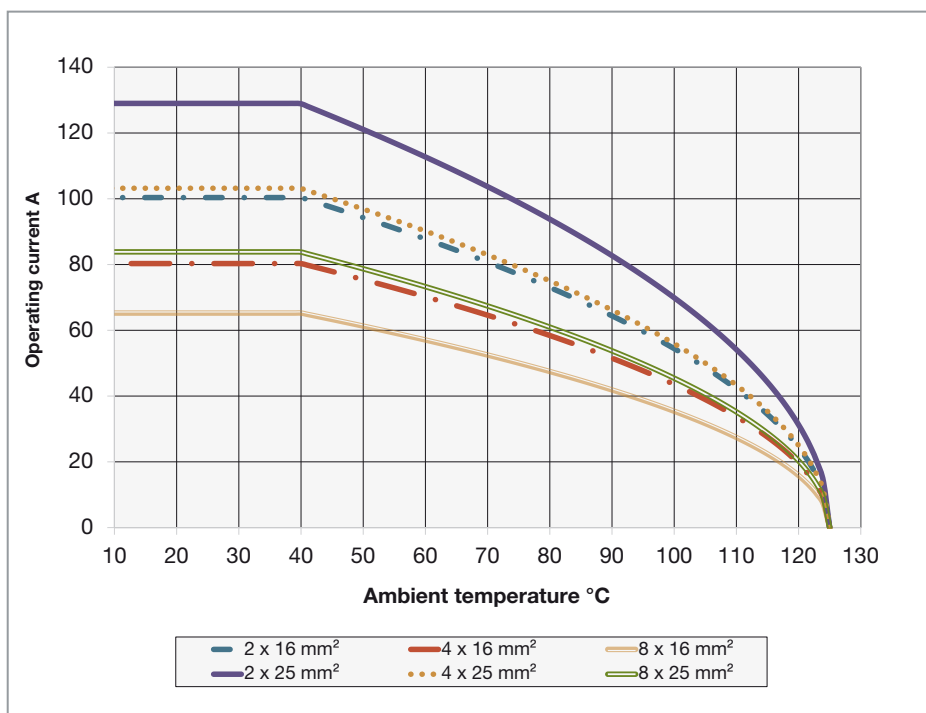
Derating curves for wires with cross sections of 35 mm<sup>2</sup>, 50 mm<sup>2</sup>, 70 mm<sup>2</sup> and 95 mm<sup>2</sup>. The maximum permissible conductor temperature is 125 °C.



**Example 2:**

Derating curves for 2, 4 and 8 bundled wires each with the cross sections 16 mm<sup>2</sup> and 25 mm<sup>2</sup>. The maximum permissible conductor temperature is 125 °C.

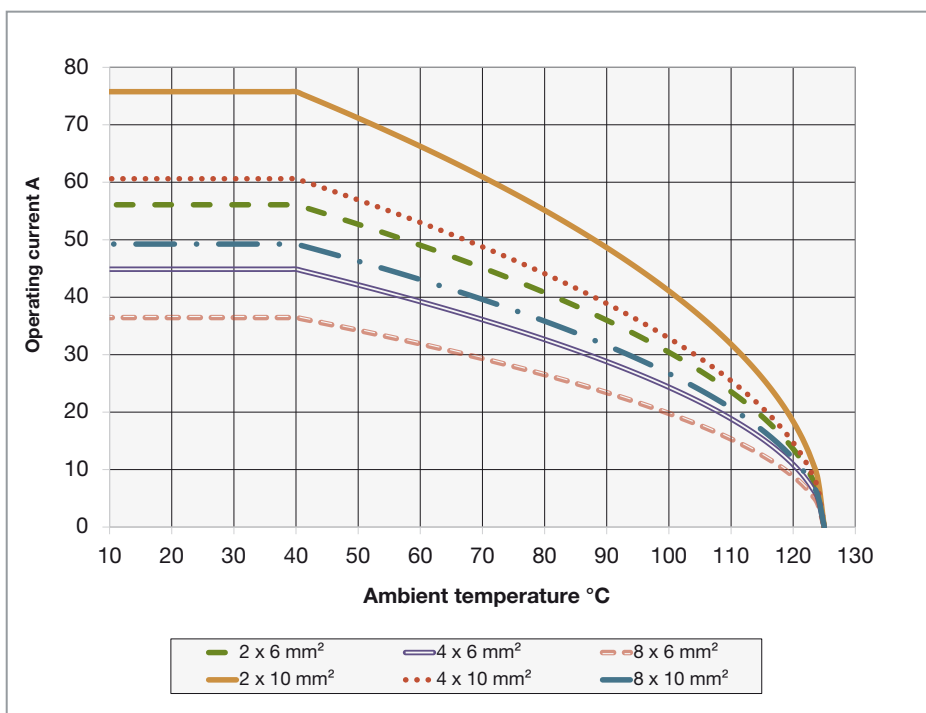
The curves were calculated according to IEC 60364-5-52:2009 table B.52.17.



**Example 3:**

Derating curves for 2, 4 and 8 bundled wires each with the cross sections 6 mm<sup>2</sup> and 10 mm<sup>2</sup>. The maximum permissible conductor temperature is 125 °C.

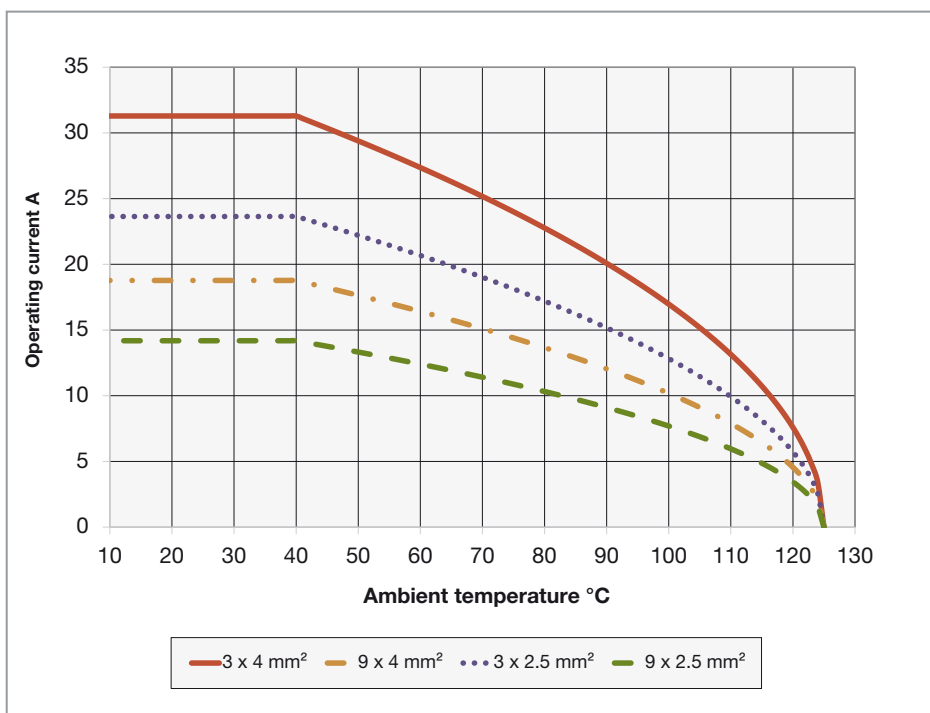
The curves were calculated according to IEC 60364-5-52:2009 table B.52.17.



**Example 4:**

Derating curves for 3 and 9 bundled wires with the cross sections 2.5 mm<sup>2</sup> and 4 mm<sup>2</sup>. The maximum permissible conductor temperature is 125 °C.

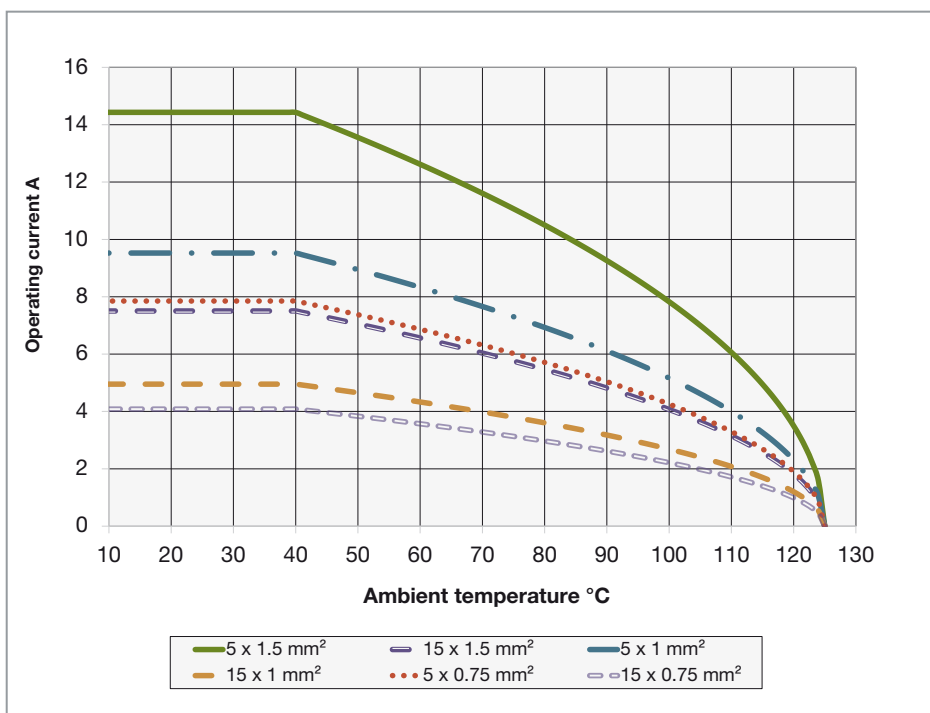
The curves were calculated according to IEC 60364-5-52:2009 table B.52.17.



**Example 5:**

Derating curves for 5 and 15 bundled wires with the cross sections 0.75 mm<sup>2</sup>, 1 mm<sup>2</sup> and 1.5 mm<sup>2</sup>. The maximum permissible conductor temperature is 125 °C.

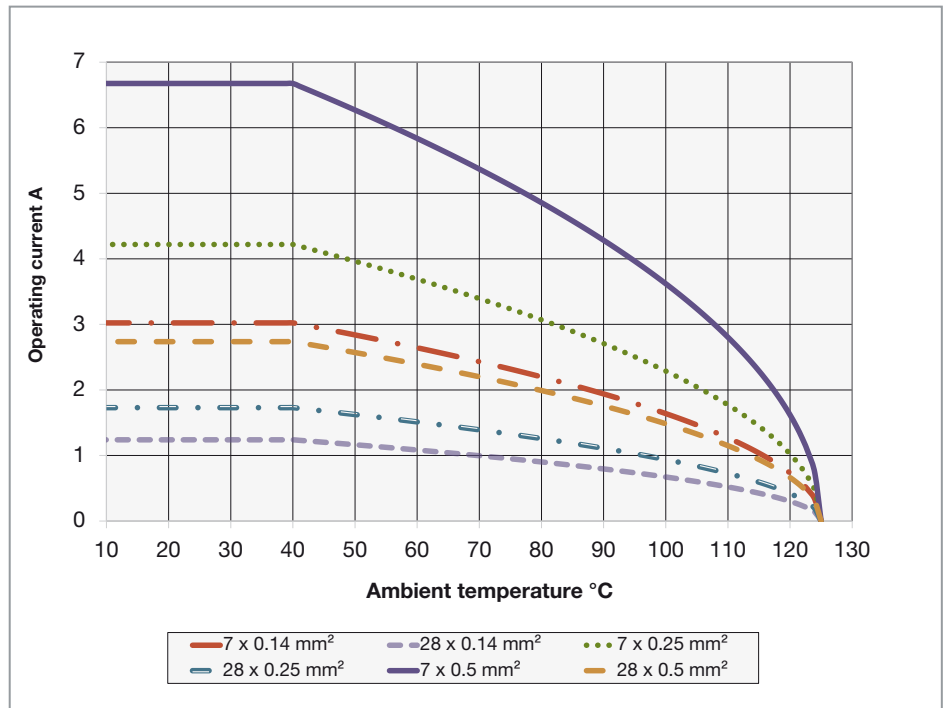
The curves were calculated according to IEC 60364-5-52:2009 table B.52.17.



**Example 6:**

Derating curves for 7 and 28 bundled wires each with the cross sections 0.14 mm<sup>2</sup>, 0.25 mm<sup>2</sup> and 0.5 mm<sup>2</sup>. The maximum permissible conductor temperature is 125 °C.

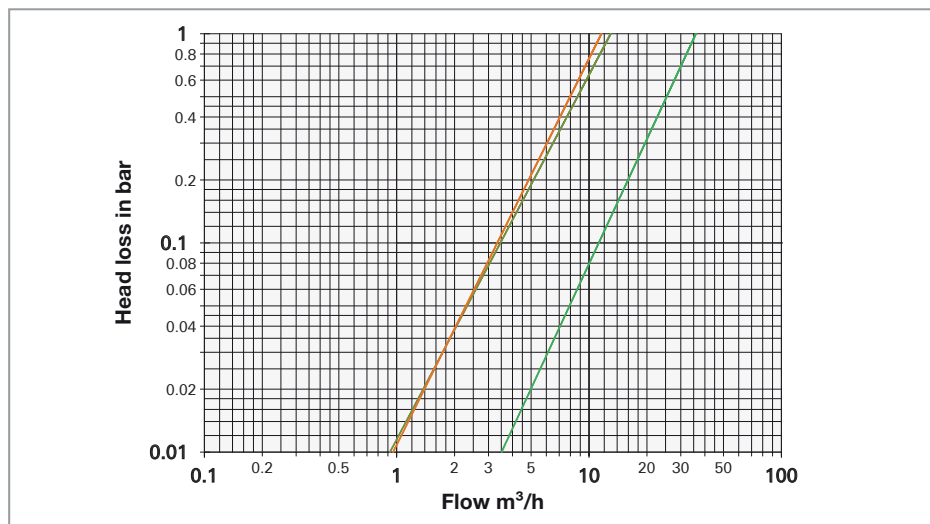
The curves were calculated according to IEC 60364-5-52:2009 table B.52.17.





# Flow, head loss diagrams, and sliding forces

Test conditions CT-...-UCT04/6, CT-...-RCT03/6

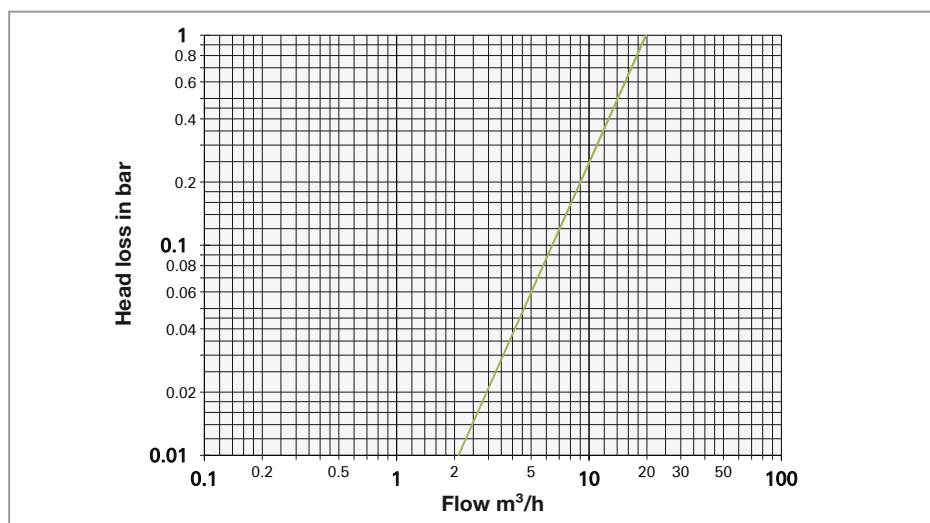


Compressed air:

Under standard conditions 0 °C, 1013 mbar

Socket	Flow direction	Plug	Max. sliding force		Input pressure	Tube-Ø
			0 bar	15 bar		
CT-B-UCT04/6 <sup>1)</sup>		CT-S-UCT04/6	9 N	46 N	6 bar	6 mm
CT-BV-RCT03/6 <sup>1)</sup>		CT-S-RCT03/6	12 N	35 N	6 bar	6 mm

Test conditions CT-...-RCT03/6



Compressed air:

Under standard conditions 0 °C, 1013 mbar

Socket	Flow direction	Plug	Max. sliding force		Input pressure	Tube-Ø
			0 bar	15 bar		
CT-B-RCT03/6		CT-S-RCT03/6	10 N	33 N	6 bar	6 mm

<sup>1)</sup> Without shut-off valve

# Technical information

## Sliding forces

The total sliding force of a connector is the sum of all the single contact sliding forces. The stated values are guideline values, and may be reduced by 20 – 30 % after a number of mating cycles.

## Locking cycles DIN housing

Max. 500 locking cycles without lubrication. For up to 5,000 locking cycles, a lubrication must be executed. See note about lubrication, assembly instructions MA213.

## Manual mating speed:

CombiTac is designed to be mated at a speed of 600 mm/min. Plugging force is equal to 1.5 times the sliding force.

## Rated current

The rated current is the current, preferably at an ambient temperature of 40 °C, that each contact of the connector or connector device can carry simultaneously and permanently (without interruption).

## Bundled wires

If the CombiTac is used together with bundled wires, a reduction factor must be applied to the wires. The derating diagrams on pages 49 – 52 show various examples for bundled copper wires with different cross sections that are suitable for use with CombiTac.

The listed wires are heat-resistant up to 125 °C. A conversion factor according to IEC 60364-5-52:2009, table B52.17 must be used for a certain number of bundled wires or wire types.

## Rated voltage (IEC 60664-1:2020)

Value of voltage assigned by the manufacturer, to a component, device, or equipment and to which operation and performance characteristics are referred. Equipment may have more than one rated voltage value or may have a rated voltage range.

The rated voltages listed below correlate normatively with the following impulse withstand voltages. This is subject to the overvoltage category to be met.

## Overvoltage categories

The concept of overvoltage categories is used for equipment energized directly from the low-voltage mains.

**CAT I:** Equipment with an impulse withstand voltage corresponding to overvoltage category I shall not have direct connection to a mains supply.

Measures shall be taken to ensure that the temporary overvoltages that could occur are sufficiently limited so that their peak value does not exceed the relevant rated impulse voltage.

Unless the circuits are designed to take the temporary overvoltages into account, equipment of overvoltage category I cannot be directly connected to the mains supply. Examples of such equipment are devices with electronic circuits and corresponding protection level.

**CAT II:** Equipment of the overvoltage category II is energy consuming equipment to be supplied from the fixed installation.

Examples of such equipment are appliances, portable tools, and other household and similar loads.

IEC 60664-1:2020			IEC 61984:2008	
Rated voltage	Impulse withstand voltage		Test voltage: r.m.s withstand voltage 1 min, 50/60 Hz	
	Overvoltage category II	Overvoltage category III	Overvoltage category II	Overvoltage category III
< 51 V	500 V	800 V	370 V	500 V
51 V – 100 V	800 V	1500 V	500 V	840 V
101 V – 150 V	1500 V	2500 V	840 V	1390 V
151 V – 300 V	2500 V	4000 V	1390 V	2210 V
301 V – 600 V	4000 V	6000 V	2210 V	3310 V
601 V – 1000 V	6000 V	8000 V	3310 V	4260 V

**CAT III:** Equipment of overvoltage category III is equipment in fixed installations and for cases where the reliability and the availability of the equipment is subject to special requirements.

Examples of such equipment are switches in the fixed installation and equipment for industrial use with a permanent connection to the fixed installation.

**Protective conductor PE (IEC 61140:2016)**

Conductor provided for purposes of safety, for example protection against electric shock. Marking of the protective bonding terminal with letter PE, or color combination green-yellow, or graphical symbol. Connect this terminal to the protective-equipotential-bonding system of the installation.

**Pollution degree 1 (IEC 60664-1:2020)**

No pollution or only dry, non-conductive pollution occurs. The pollution has no influence.

**Pollution degree 2 (IEC 60664-1:2020)**

Only non-conductive pollution occurs except that occasionally a temporary conductivity caused by condensation is to be expected.

**Pollution degree 3 (IEC 60664-1:2020)**

Conductive pollution occurs or dry non-conductive pollution occurs which becomes conductive due to condensation which is to be expected.

**Connector resistance**

The connector resistance is determined by means of the voltage drop, measured between the lead terminations of the pin and socket. The values given are average values determined at rated current.

**Mating cycles**

Mating cycles tests for CombiTac parts are performed under typical laboratory environmental conditions.

**Limiting temperature**

The limiting temperatures specified in this catalog apply to CombiTac connectors in mated condition.

**RoHS Conformity**

**European Directive 2011/65/EU (RoHS 2)**

**Commission Delegated Directive (EU) 2015/863 (RoHS 3)**

For further information please visit our website  
<https://ec.staubli.com/downloads/certificates/rohs>

# Safety notes

## Protection against electric shock

A connector shall be so designed that, after mounting, its live parts are not accessible by the IEC test finger in accordance with clause 5 of IEC 60529:2013 using a test force of 20 N. These products are designed to be built into a housing that guarantees the relevant IP protection for cable connections (at least IP2X). Protection against electric shock must be provided by the end product and ensured by the users themselves. This requirement does not apply to a connector operated with a safety extra-low voltage (SELV) of a maximum AC 50 V eff. or DC 120 V. The customer must take appropriate measures when fitting the connectors to ensure that the cable connection is protected against tension and twisting and is responsible for correct implementation of the contact-protection measures.

Connecting and disconnecting when live is permitted.

Connecting and disconnecting under load is not permitted.

## Enclosure

An enclosed connector is a connector for which the protection against electric shock is ensured by the housing of the connector itself. An unenclosed connector is a connector for which the protection against electric shock is provided by the enclosure of the equipment in which the connector is mounted.

In relation to the direction of power flow, connectors should be incorporated in the circuit wiring in such a way that pins that can be touched are not live in the unmated state (IEC 61984:2008).

## Protection wall

In order to meet the requirement for protection against accessibility of live parts during connecting and disconnecting, CombiTac is provided with a specially designed protection wall.

## Electrical contacts in close proximity to connectors for liquids and gases

Defect electrical contacts or connectors that leak gas or liquids can be a safety hazard to personnel, the environment, as well as affecting the proper function of the system. It is the responsibility of the end-user to ensure that both safety and proper function in the end-use is guaranteed. The result of a risk analysis requires that the end-user of CombiTac connectors must ensure the following:

- All relevant national and international standards and regulations must be complied with in the end-use.
- Field-tested techniques must be applied and, a risk assessment must be carried out in order to identify and reduce the risks.
- The use of flammable or explosive liquids or gases is prohibited.
- Exclusively CT-...SCT couplings with both male and female-sided locking systems are permitted to be used for liquids.
- Automatic disconnection of power supply in the event of indirect contact, overload, or short circuit is required according to IEC 60364-4-41:2017.

- If the voltage is higher than AC 50 V or DC 120 V, all simultaneously accessible conductive parts that do not carry current during normal operation must be connected to the protective conductor (protective equipotential bonding according to IEC 60364-4-41:2017).
- If the voltage is higher than AC 50 V or DC 120 V, all electric circuits have to be protected by a residual-current-operated protective device (RCD) with a rated residual operating current not exceeding 30 mA according to IEC 60364-4-41:2017.
- Connecting or disconnecting under load or live is not allowed (connector without breaking capacity according to IEC 61984:2008).
- On permanently fixed installations, electrical contacts have to be placed above liquid couplings.
- In CombiTac housing applications, the housing has to be connected to the protective conductor according to IEC 60364-4-41:2017.
- The fluid couplings must be replaced if a leak is detected.

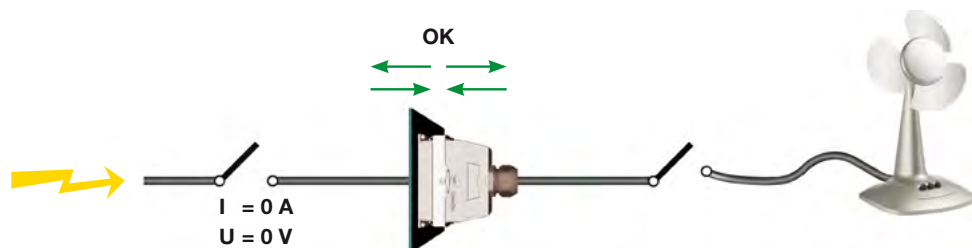
**Underwriters Laboratories****Standard UL 1977 states:**

A connector operated above 30 V (42 V peak) up to AC/DC 600 V intended for usage external to the end equipment shall have live parts protected against exposure to contact by persons when assembled, installed, and mated as intended, as determined by the use of the articulate probe with web stop (UL test finger).

Mating devices operated above 30 V up to AC/DC 600 V intended for usage external to the end equipment shall not have exposed live contacts during engagement or withdrawal, as determined by the use of the articulate probe with web stop (UL test finger).

# Safety situation for CombiTac connectors

Connecting and disconnecting when CombiTac is isolated from supply

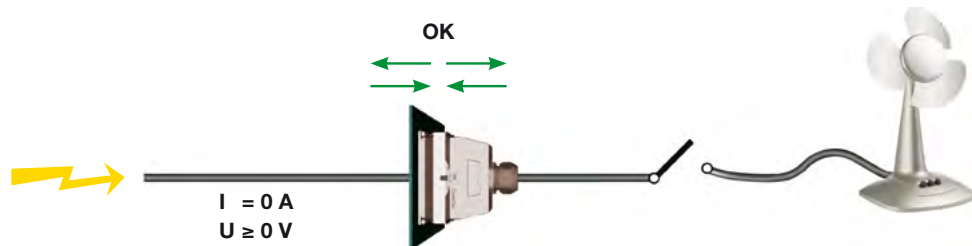


Connecting and disconnecting when live is permitted.

**With protection wall**



Connecting and disconnecting under load is not permitted.



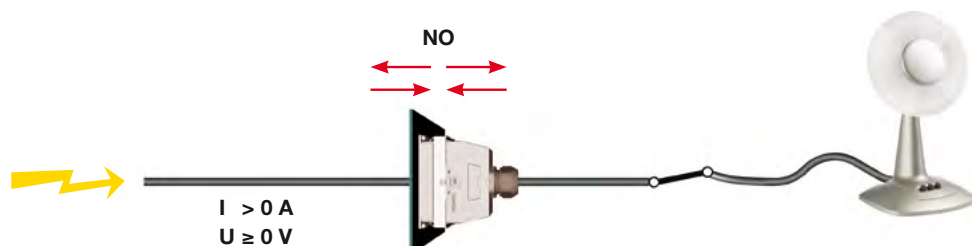
**⚠ Attention**

When disconnected, the socket side is touch protected, i.e. has IP2X protection

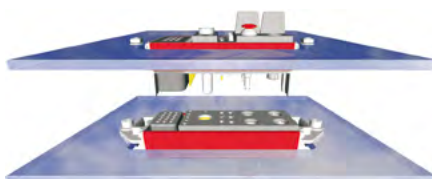
according to IEC 60529 (test finger). See also page 57, section "Underwriters Laboratories standard UL 1977".

Connecting and disconnecting when live and under load not permitted.

**With or without protection wall**



Panel-mounted version



The protection against electric shock is provided by the enclosure of the equipment in

which it is installed. This is provided by the CombiTac end-user.

## Index

Type	Page
CH-CHG5-T	31
CT-AG1 IP68 HE	41
CT-AG1 TP	46
CT-AG2 IP68 HE	41
CT-AG2 TP	46
CT-AG3 IP68 HE	41
CT-AG3 TP	46
CT-AG4 IP68 HE	41
CT-AG4 TP	46
CT-B-RCT03/4	23
CT-B-RCT03/6	23
CT-BV-RCT03/4	23
CT-BV-RCT03/6	23
CT-CH1-S	30
CT-CH1-T	30
CT-CH2-S	30
CT-CH2-S/PW	33
CT-CH2-S/PW-PC	33
CT-CH2-T	30
CT-CH2-T/PW	33
CT-CH2-T/PW-PC	33
CT-CH3-S	30
CT-CH3-S/PW	33
CT-CH3-S/PW-PC	33
CT-CH3-T	30
CT-CH3-T/PW	33
CT-CH3-T/PW-PC	33
CT-CH4-S	30
CT-CH4-S/PW	33
CT-CH4-S/PW-PC	33
CT-CH4-T	30
CT-CH4-T/PW	33
CT-CH4-T/PW-PC	33
CT-CH5-S	30
CT-CH5-S/PW	33
CT-CH5-S/PW-PC	33
CT-CH5-T	30
CT-CH5-T/PW	33
CT-CH5-T/PW-PC	33
CT-CH6-S	30
CT-CH6-S/PW	33
CT-CH6-S/PW-PC	33
CT-CH6-T	30
CT-CH6-T/PW	33

Type	Page
CT-CH6-T/PW-PC	33
CT-CHG1-T	31
CT-CHG2-T	31
CT-CHG2-T/PW	31
CT-CHG3-T	31
CT-CHG3-T/PW	31
CT-CHG4-T	31
CT-CHG4-T/PW	31
CT-CP	48
CTD-10-SRTU/43	11
CTD-C1,5-5/P	16
CTD-C1,5-5/S	16
CTD-C1-7/P	18
CTD-C1-7/S	18
CTD-C3-2+PE/P	14
CTD-C3-2+PE/S	14
CTD-C3-3/P	14
CTD-C3-3/S	14
CTD-C7-2/P	12
CTD-C7-2/S	12
CTD-C10-1/P	10
CTD-C10-1/S	10
CTD-CP-2/P	22
CTD-CP-2/S	22
CTD-DIP3,5	24
CT-DDI-SM2	39
CT-DDI-SM3	39
CT-DDI-SM4	39
CTD-FH1/P	25
CTD-FH1/S	25
CTD-FH2/P	25
CTD-FH2/S	25
CTD-FH3/P	25
CTD-FH3/S	25
CTD-FH4/P	25
CTD-FH4/S	25
CTD-FP1/P	25
CTD-FP1/S	25
CTD-FP2/P	25
CTD-FP2/S	25
CTD-FP3/P	25
CTD-FP3/S	25
CTD-FP4/P	25
CTD-FP4/S	25

Type	Page
CTD-LMFB-P/0,14-0,25	20
CTD-LMFB-P/0,25-0,75	20
CTD-LMFB-P1/0,14-0,25 AU	21
CTD-LMFB-P1/0,25-0,75 AU	21
CTD-LMFB-S/0,14-0,25	20
CTD-LMFB-S/0,25-0,75	20
CTD-LMFB-S1/0,14-0,25 AU	21
CTD-LMFB-S1/0,25-0,75 AU	21
CTD-M-CZ	48
CTD-P1/0,14-0,25 AU	19
CTD-P1/0,25-0,75 AU	19
CTD-P1,5/0,75-1,5 AU	17
CTD-P3/2,5-4 AU	15
CTD-P3/2,5-4/PE AU	15
CTD-P7/6 IP2X AG	13
CTD-P7/10 IP2X AG	13
CTD-P7/16 IP2X AG	13
CTD-P7/25 IP2X AG	13
CTD-P10/35 IP2X AG	11
CTD-P10/50 IP2X AG	11
CTD-P10/70 IP2X AG	11
CTD-P10/95 IP2X AG	11
CTD-RC7	12
CTD-RC10	10
CTD-S1/0,14-0,25 AU	19
CTD-S1/0,25-0,75 AU	19
CTD-S1,5/0,75-1,5 AU	17
CTD-S3/2,5-4 AU	15
CTD-S7/6 AG	13
CTD-S7/10 AG	13
CTD-S7/16 AG	13
CTD-S7/25 AG	13
CTD-S10/35 AG	11
CTD-S10/50 AG	11
CTD-S10/70 AG	11
CTD-S10/95 AG	11
CT-I-CP6	48
CT-K-VSH M25x9,5-12,5 MS	40
CT-K-VSH M25x10-17 MS	40
CT-K-VSH M25x16-20,5 MS	40
CT-K-VSH M32x14-17 MS	40
CT-K-VSH M32x17-21 MS	40
CT-K-VSH M32x21-25,5 MS	40
CT-PC1 IP68 HE	42

Type	Page
CT-PC2 IP68 HE	42
CT-PC3 IP68 HE	42
CT-PC4 IP68 HE	42
CT-PDI-SM2	39
CT-PDI-SM3	39
CT-PDI-SM4	39
CT-PM1	37
CT-PM1-PC	37
CT-PM2	37
CT-PM2-PC	37
CT-PM2/PW	37
CT-PM3	37
CT-PM3-PC	37
CT-PM3/PW	37
CT-PM4	37
CT-PM4-PC	37
CT-PM4/PW	37
CT-PM5	37
CT-PM5-PC	37
CT-PM5/PW	37
CT-PM6	37
CT-PM6-PC	37
CT-PS1-SM/P	39
CT-PS1-SM/S	39
CT-PS2/PC-SM/S	39
CT-PS2-SM/P	39
CT-PS2-SM/S	39
CT-PS3/PC-SM/S	39
CT-PS3-SM/P	39
CT-PS3-SM/S	39
CT-PS4/PC-SM/S	39
CT-PS4-SM/P	39
CT-PS4-SM/S	39
CT-PS5/PC-SM/S	39
CT-PS5-SM/P	39
CT-PS5-SM/S	39
CT-PS6/PC-SM/S	39
CT-PS6-SM/P	39
CT-PS6-SM/S	39
CT-SD-AG1 TP	47
CT-SD-AG2 TP	47
CT-SD-AG3 TP	47
CT-SD-AG4 TP	47
CT-SG1 IP68 HE	42



Type	Page
CT-SG1 TP	47
CT-SG2 IP68 HE	42
CT-SG2 TP	47
CT-SG3 IP68 HE	42
CT-SG3 TP	47
CT-SG4 IP68 HE	42
CT-SG4 TP	47
CT-SM1	35
CT-SM1-PC	35
CT-SM2	35
CT-SM2-PC	35
CT-SM2/PW	35
CT-SM3	35
CT-SM3-PC	35
CT-SM3/PW	35
CT-SM4	35
CT-SM4-PC	35
CT-SM4/PW	35
CT-SM5	35
CT-SM5-PC	35
CT-SM5/PW	35
CT-SM6	35
CT-SM6-PC	35
CT-S-RCT03/4	23
CT-S-RCT03/6	23
CT-TG1-G IP68 HE	41
CT-TG1-G TP	46
CT-TG1-S IP68 HE	41

Type	Page
CT-TG1-S TP	46
CT-TG2-G IP68 HE	41
CT-TG2-G TP	46
CT-TG2-S IP68 HE	41
CT-TG2-S TP	46
CT-TG3-G IP68 HE	41
CT-TG3-G TP	46
CT-TG3-S IP68 HE	41
CT-TG3-S TP	46
CT-TG4-G IP68 HE	41
CT-TG4-G TP	46
CT-TG4-S IP68 HE	41
CT-TG4-S TP	46
MALU-PZ13	48
MES-CZ-CTD1	48
MES-CZ-CTD1,5	48
MES-CZ-CTD3	48
MES-PZ-TB5/6	48
MES-PZ-TB 8/10	48
MES-PZ-TB 9/16	48
MES-PZ-TB11/25	48
MPS-PZ13	48
M-PZ13	48
M-PZ-T2600	48
TB7-20	48
TB8-17	48
TB9-13	48
TB11-14,5	48



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