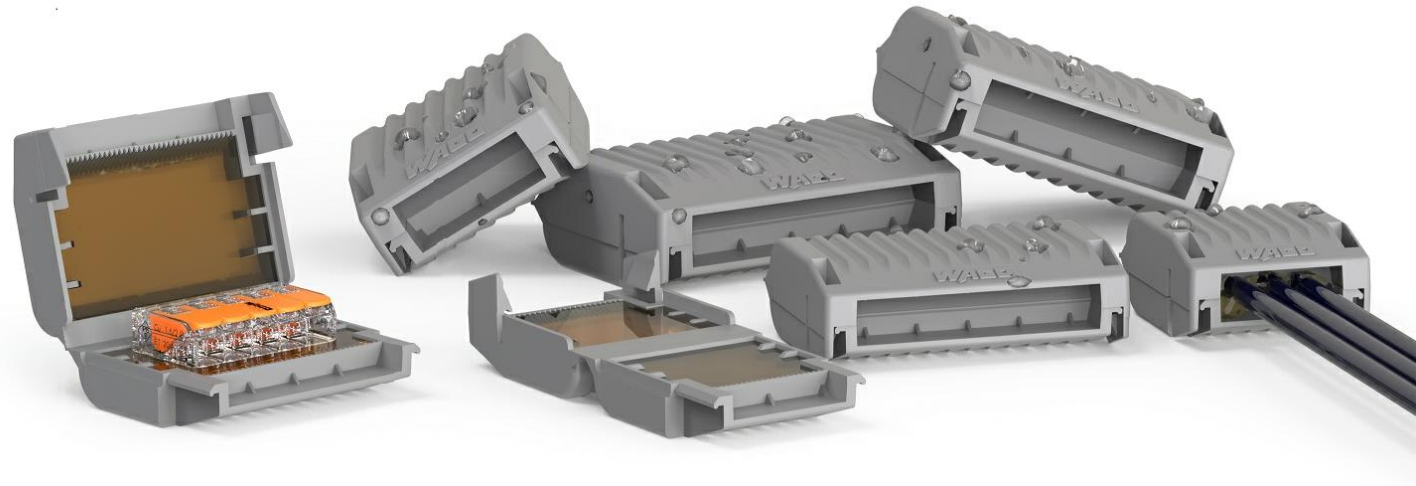




WAGO Gelboxes for connectors

Simply moisture protected

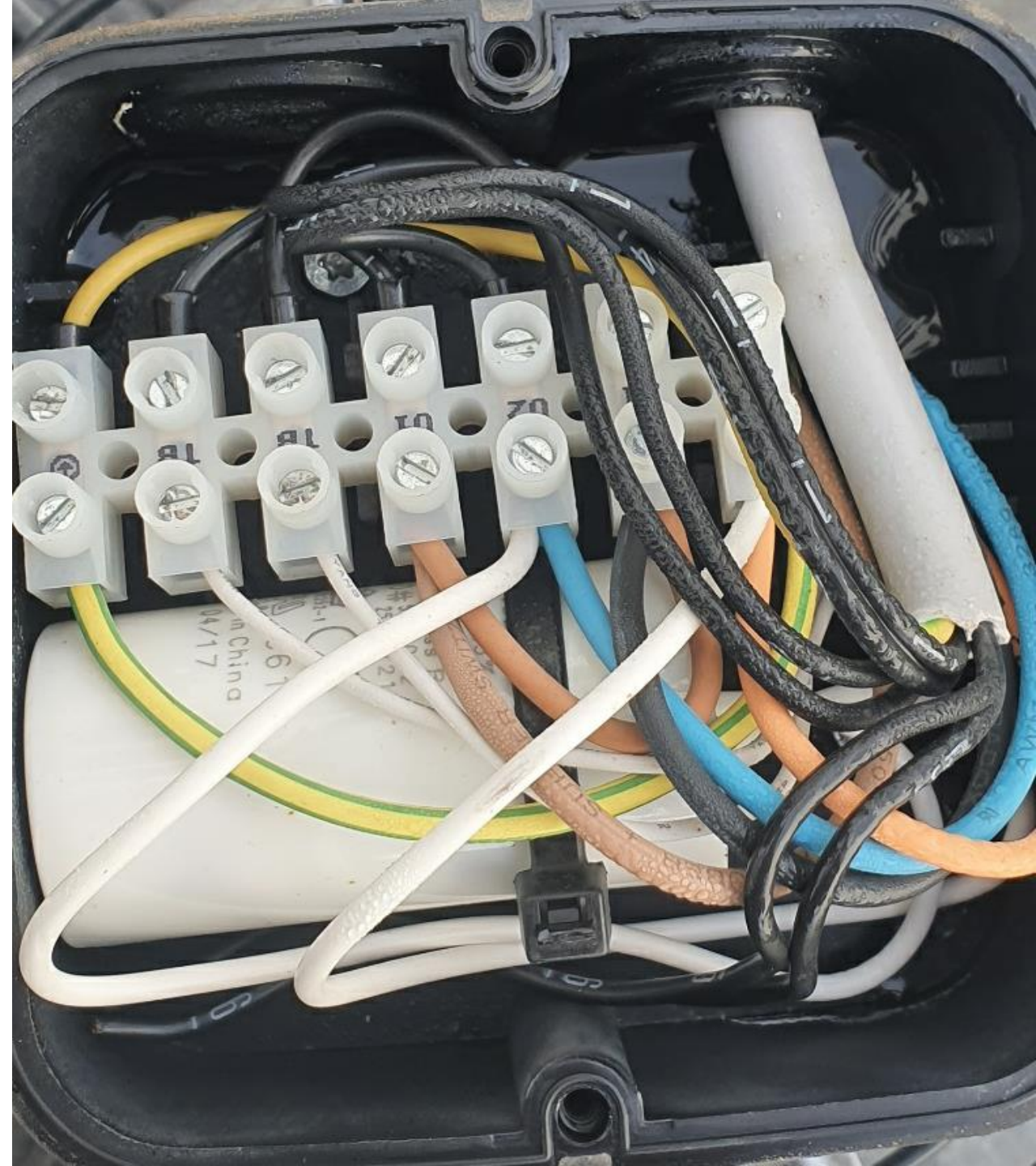


Agenda

Topic 1	Target market/application
Topic 2	The Product: features and benefits
Topic 3	Handling
Topic 4	Technical specification
Topic 5	Alternatives / Competition
Topic 6	Artikelnummern/ Availability
Topic 7	Marketing

Topic 1

Target market /application

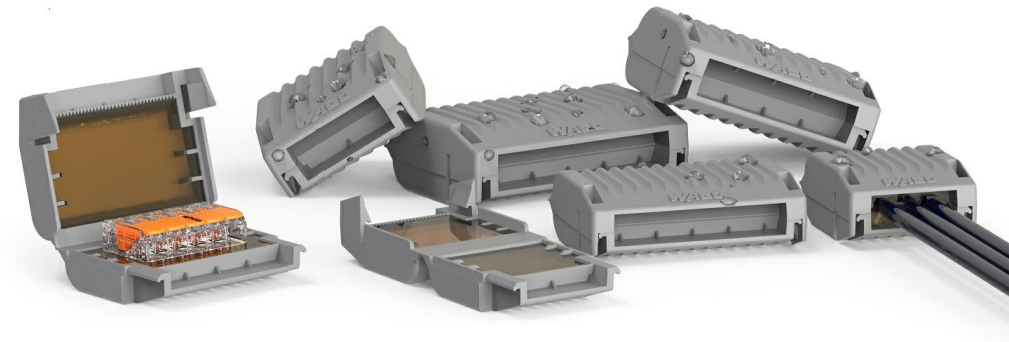


WAGO Gel Boxes for connectors

Target market/application

Background:

- Target market: electrical installation
- Sales channel: wholesaler
- the gel boxes for the connectors are accessories for the connectors of the 221 / 2273 series
- with the WAGO Gel Boxes we expand the application range of the connectors
- Internationally, there have been repeated requests for moisture protection for connectors



WAGO Gelboxes for connectors

Tarket market/application

Application examples:

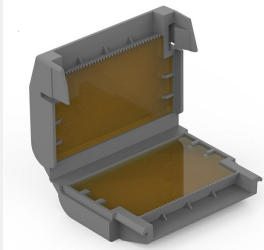
- Electrical installation in moist and wet ranges, as:
 - Outdoor area
 - Pump chamber
 - Outdoor sockets
 - Greenhouses
 - Farming
 - Landscape lighting
 - Parking lighting
 - Washing facilities
 - Charging station and lighting systems in ports
 - Perimeter wire mower roboter



WAGO Gelboxes for connectors

Target market/application

Differentiation Gelbox / Junction Box with Resin / cable sleeve

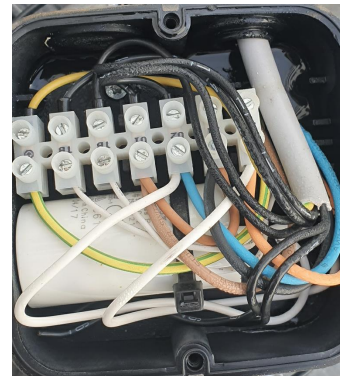
Name	Version	Picture	Application area (EN)	Features
Cable Sleeve	Casting / shrinking		In the ground with or without traffic loads (under streets) / in water	Cable jacked is enclosed– System is sealed
Junction box with resin	casting		Outer walls, inside walls, below, in the ground <u>without traffic loads</u>	Cable jacked is enclosed– System is sealed
Gel boxes	Prefilled with resin		In application area of junction boxes „above“ the ground, because earth wire is not longitudinal watertight	Only single core is sealed, use in junction box as a component of the system

WAGO Gelboxes for connectors

Target market/application

Why an additional moisture protection?

- The junction box protects the connector and the conductor and provides double insulation of the single wires
- Even if a junction box is "tight" e.g. to IP 67, air is still exchanged.
- In the unfavorable case, moist warm air enters the junction box and heats up further due to the heat dissipation, allowing the air to absorb even more moisture
- With rapid temperature changes, e.g. in spring or autumn (minus degrees at night), the housing wall cools down quickly and the humid air condenses on the housing and water remains in the junction box
- This causes electrical faults
- Other reasons: leaking cable glands / sealing lips, sharp wart jet



WAGO Gel Boxes for connectors

Handling / application

Application notes:

Low voltage:

For low voltage applications, e.g. 230 V, double insulation of the entire system, especially of the core, must be ensured.

This can be achieved by inserting the gel boxes into a housing / junction box according to EN 60670.

Example: Junction box on outside wall

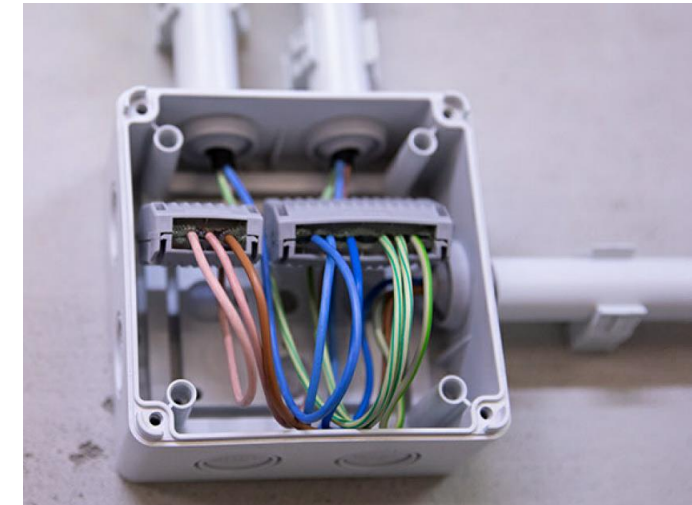
extra low voltage:

For extra low voltage (e.g. SELV) the basic isolation of the electrical core is sufficient. The basic isolation must be suitable for the application

Example:

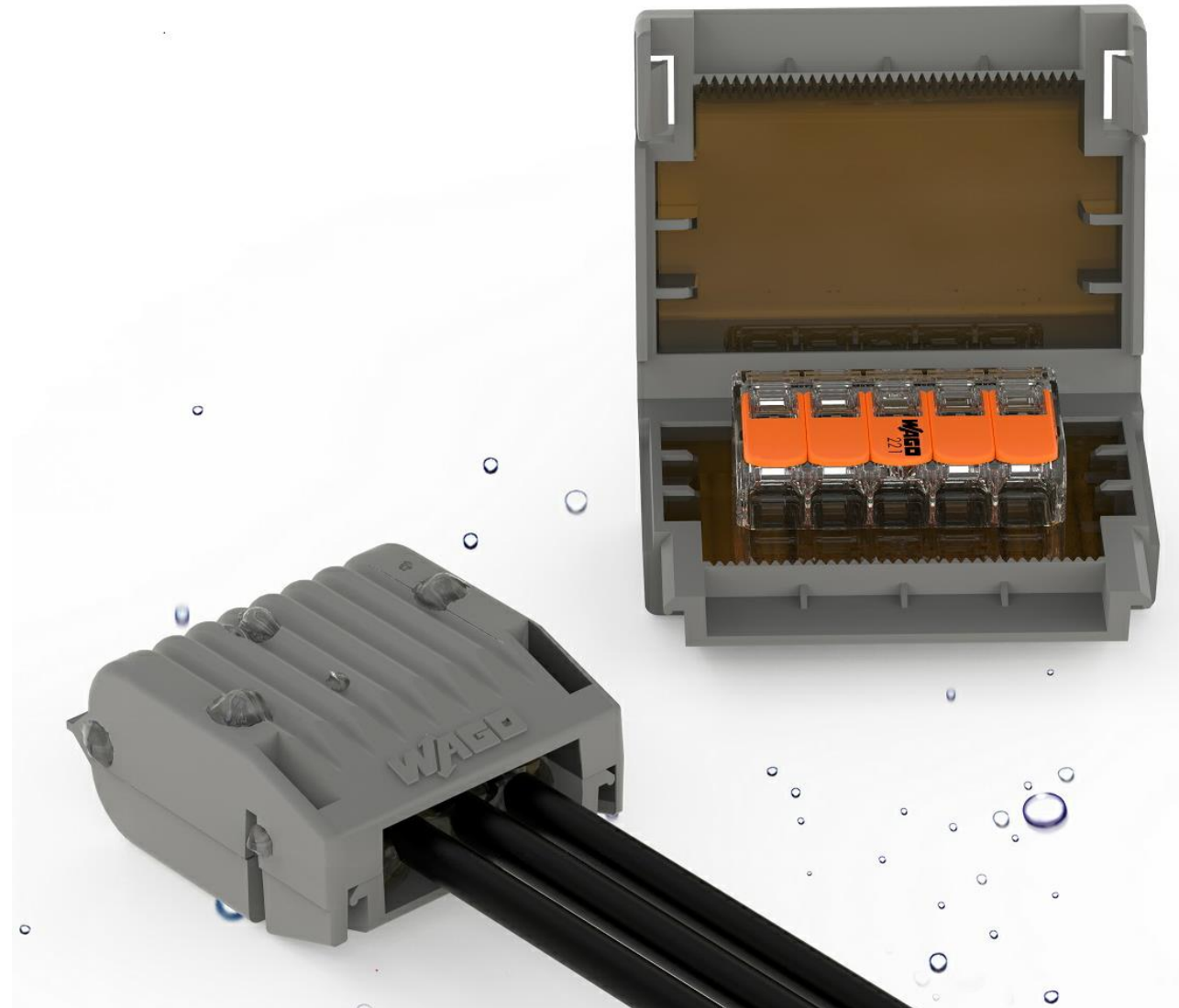
perimeter wire for lawn mowing robot

Note: The gel box does not override electrical installation regulations and is not a junction box



Topic 2

The product: features and benefit

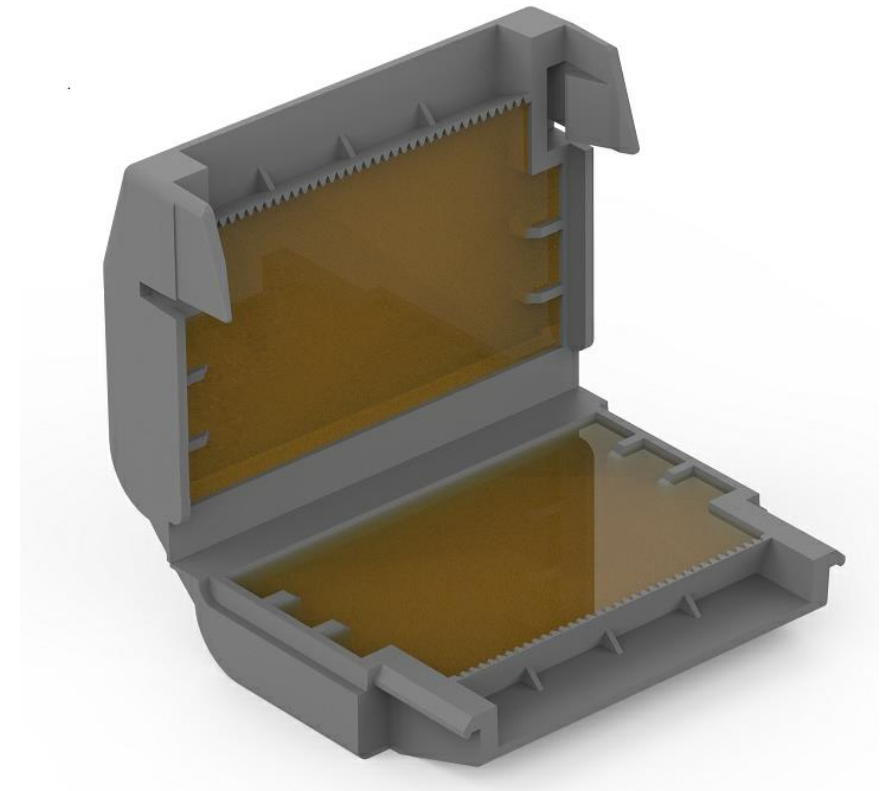


WAGO Gel Boxes for connectors

The product: features and benefit

Product concept:

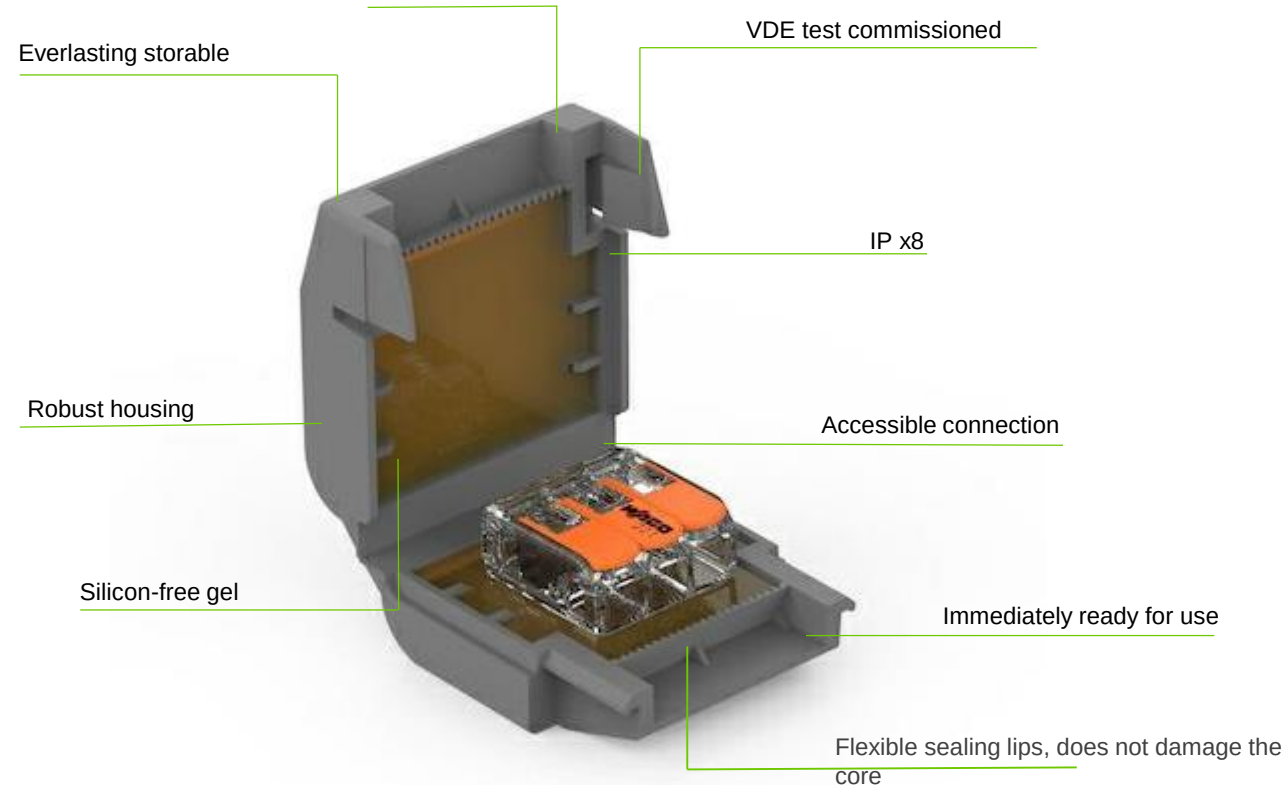
- 2 plastic trays are connected by a film hinge
- each half is prefilled with a stricky polyurethane-based gel
- the gel is non labeled according to CLP (EU-chemicals regulation)
- the gel is silicone-free



WAGO Gel Boxes for connectors

The product: features and benefit

Features and benefit



WAGO Gel Boxes for connectors

The product: features and benefit

Features and benefit

Simple application

- space saving due to compact design
- Even more space in the junction box as several terminals can be used in one gel box
- Easy handling through innovative design
- Easily extend circuits thanks to fast re-accessibility



WAGO Gel Boxes for connectors

The product: features and benefit

Features and benefit

Safe application

- complete system of Gel Box and WAGO Series 221 / 2273 will be tested by VDE
- Optimum protection through specific Gel Box / connector combination of 221 / 2273 connectors.
Always the optimal Gel displacement with safe handling.
- protection against moisture and water ingress according to IPx8
- Labelling-free Cellpack quality gel
- Stability through a robust housing
- conductors are not damaged by flexible sealing lip



WAGO Gel Boxes for connectors

The product: features and benefit

Features and benefit

Quick application

- time saving due to direct commissioning, no mixing and hardening of the gel mass necessary → resin needs 1h for curing
- always ready for use due to unlimited storable gel filled Boxes → resin has mostly a shelf life of just one year



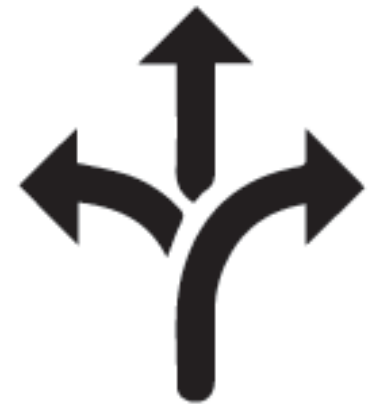
WAGO Gel Boxes for connectors

The product: features and benefit

Features and benefit

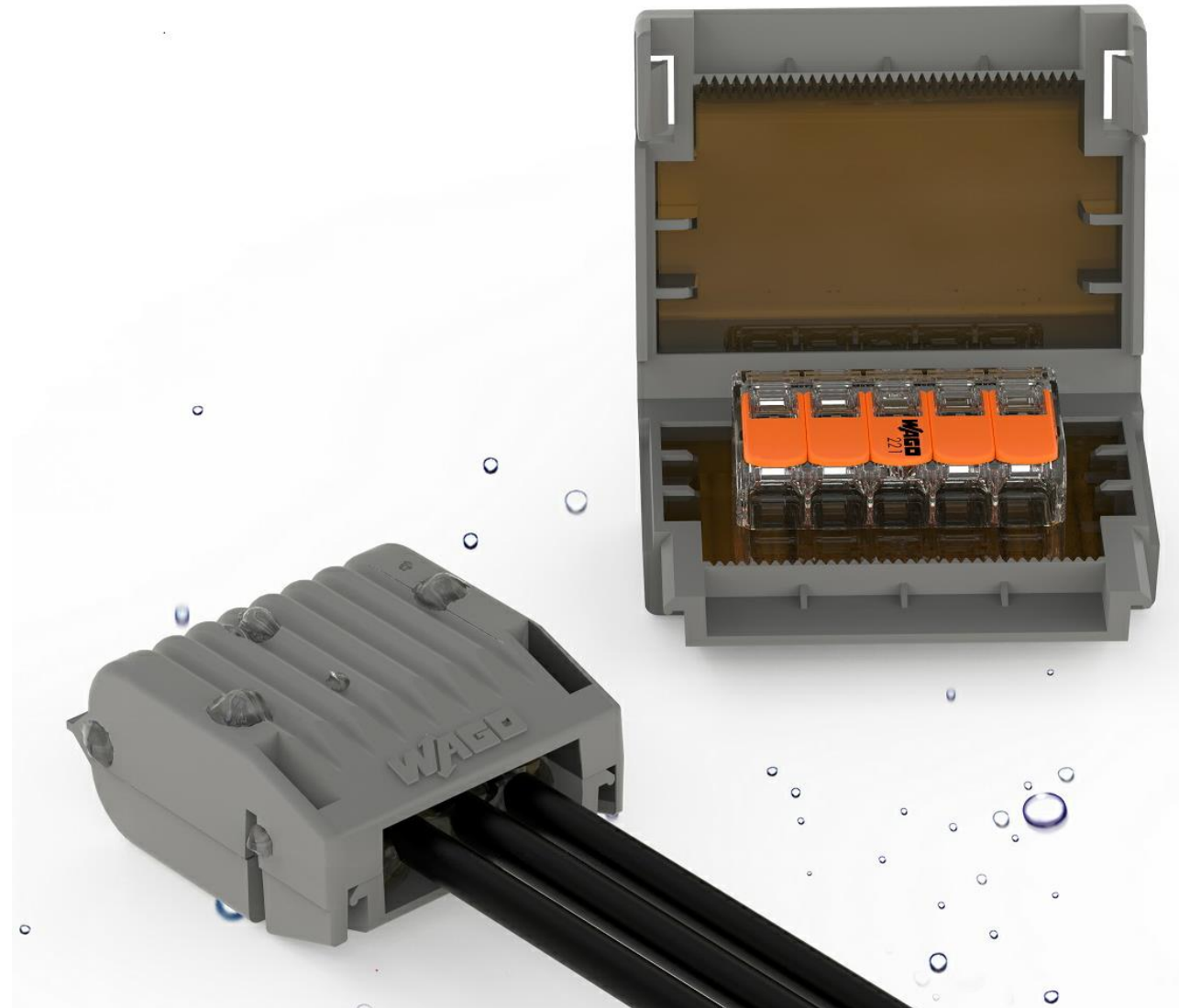
Versatile application

- can be used in all branches of industry due to silicone-free gel
- Moisture protection on ceiling → can't be done with resin
- in low voltage range with additional housing (double insulation)



Topic 3

Handling



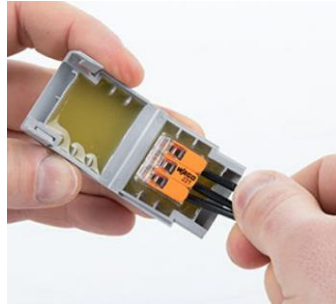
WAGO Gel Boxes for connectors

Handling / Application

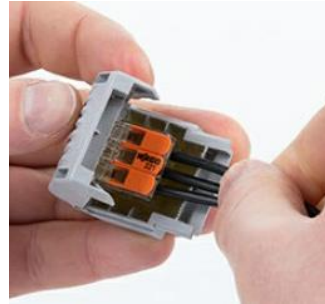
Handling



Open Gel Box



Insert wired connector into Gel Box



Close Gel Box



Securely close the latches



Press center



Accessible again: open gel box and remove gel, rewire with new components

WAGO Gel Boxes for connectors

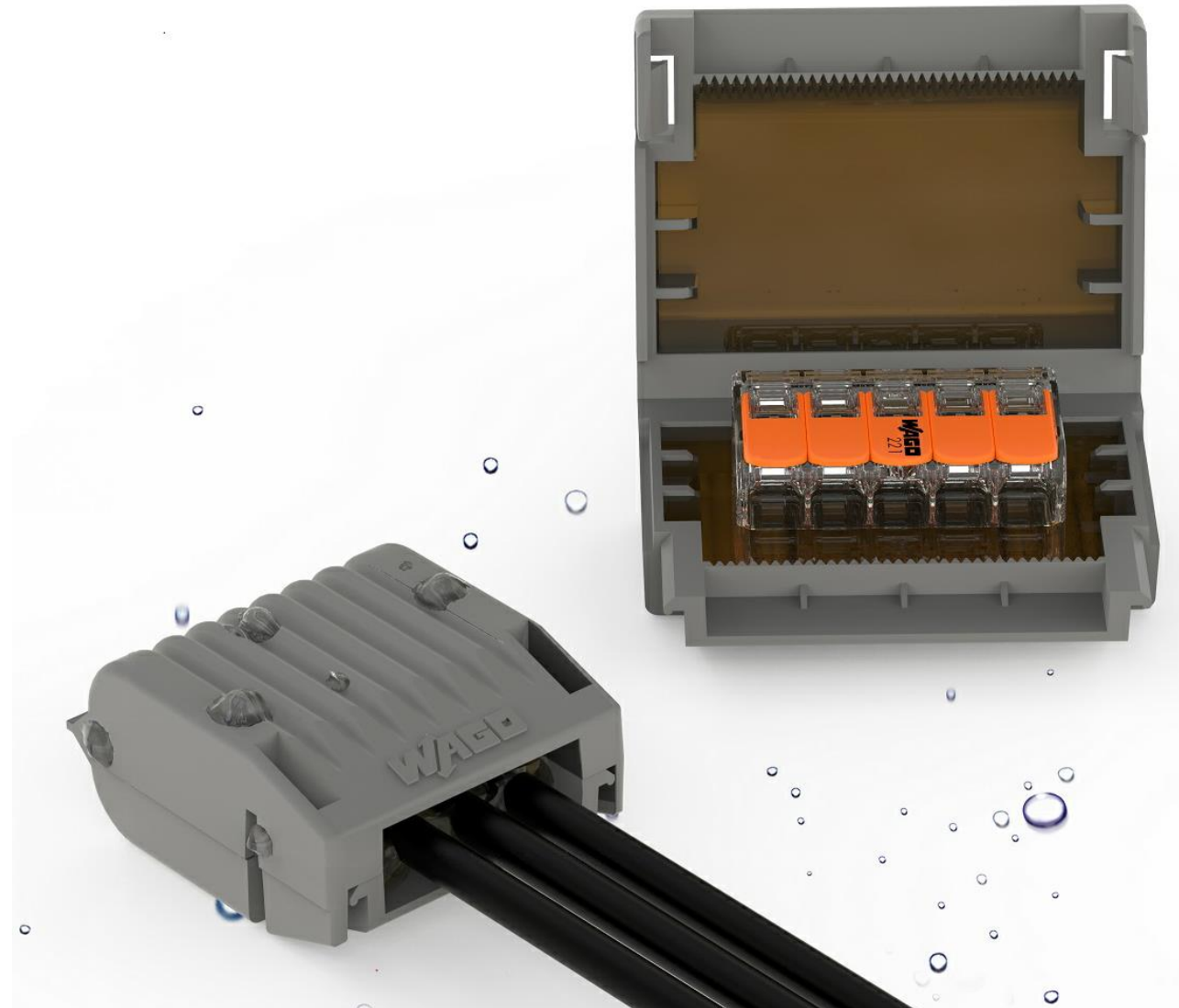
Handling / Application

Permissible combinations of connecting terminals and Gel Box

Artikelnummer	221-412	221-413	221-415	221-612	221-613	221-615	2273-202	2273-203	2273-204	2273-208
207-1331	1 x 	1 x 	-				2 x 	-	1 x 	1 x 
207-1332	2 x 	-	1 x 				3 x 	2 x 	-	1 x 
207-1333	3 x 	2 x 	-				4 x 	-	2 x 	2 x 
207-1431				1 x 	1 x 	-				
207-1432				2 x 	-	1 x 				
207-1433				3 x 	2 x 	-				

Topic 4

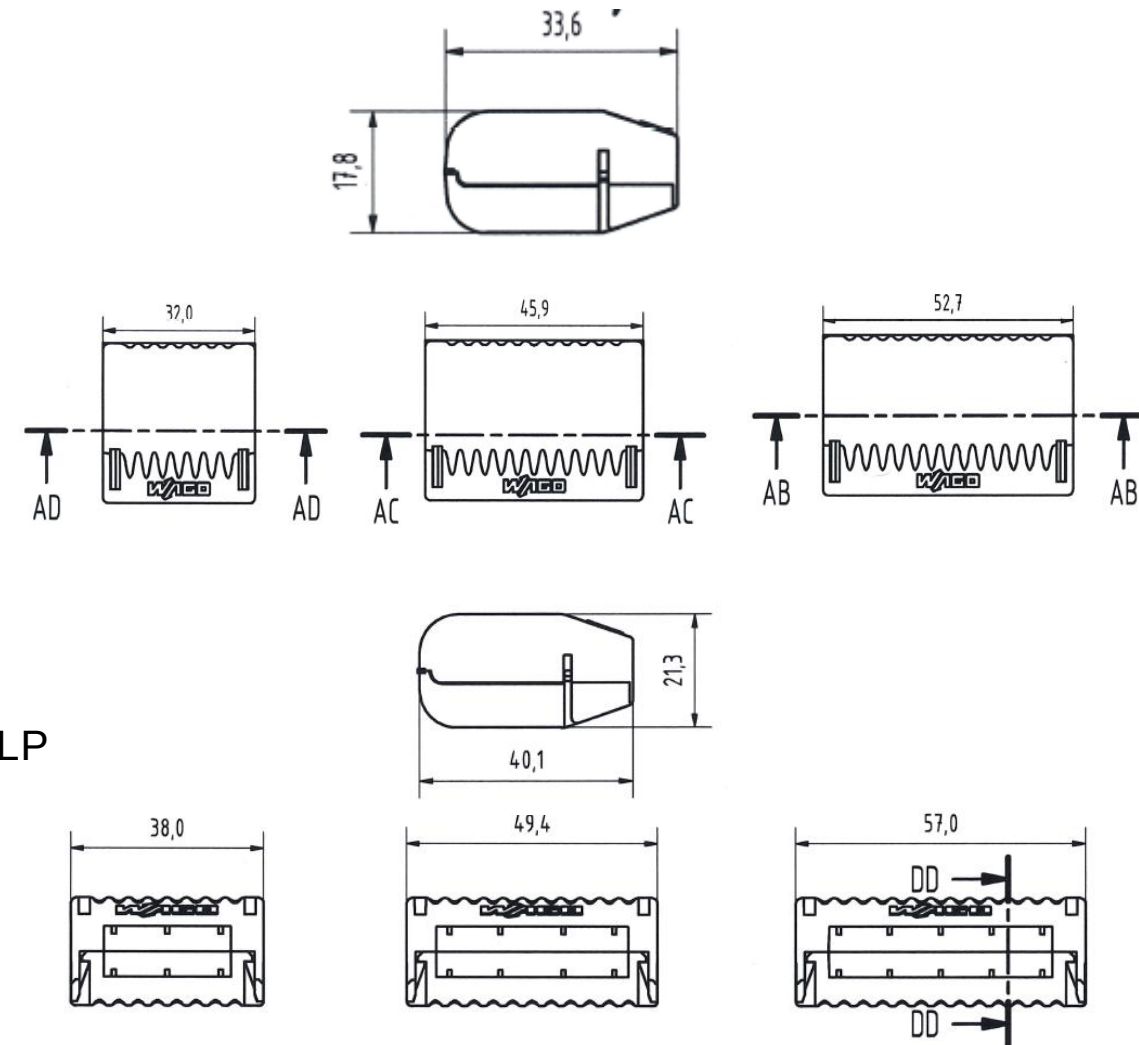
Technical specifications



WAGO Gel Boxes for connectors

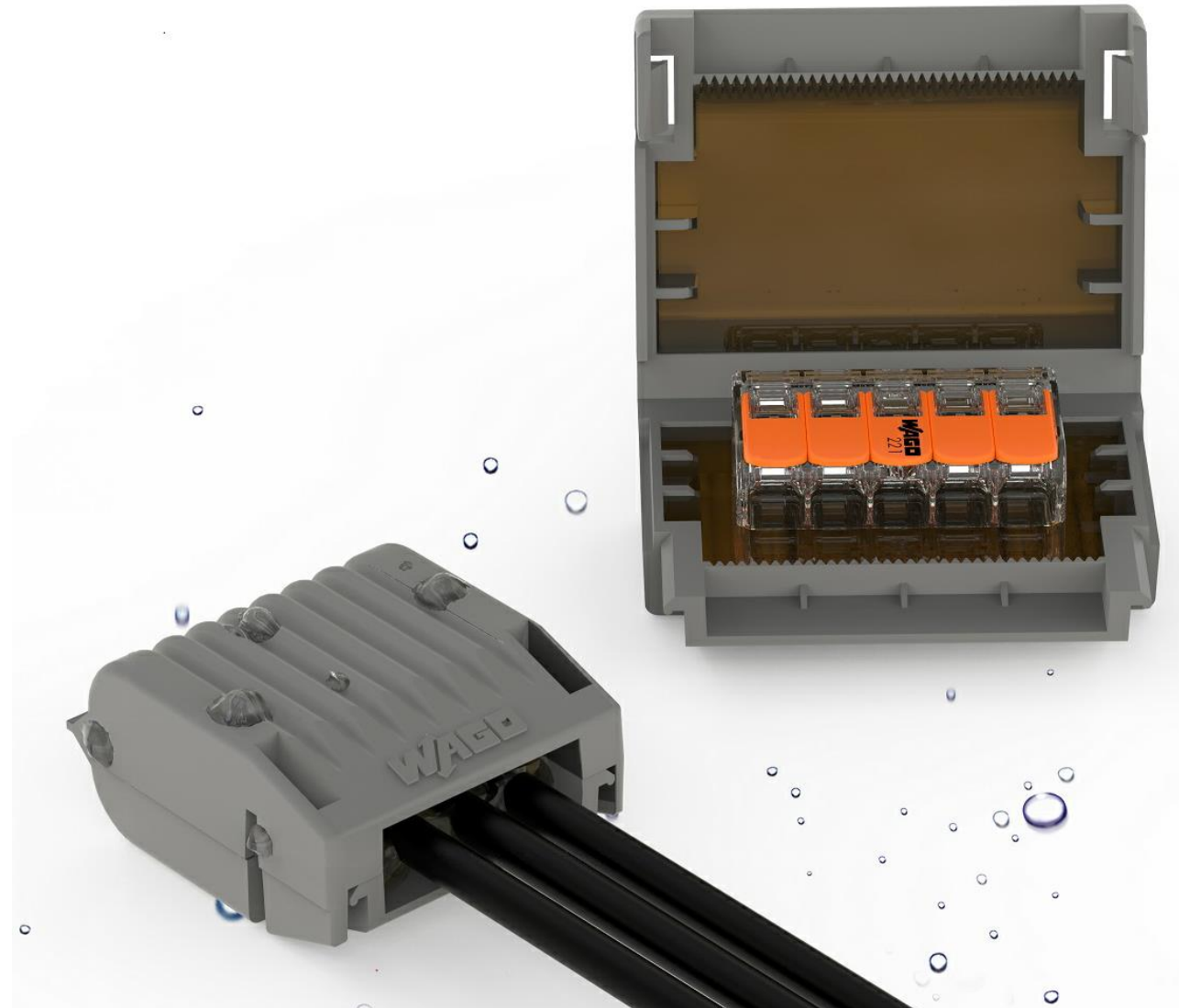
Technical specifications

- Housing material: Polypropylene
- Gel material: Polyurethane
- Rated voltage: (see terminal voltage)
- Rated current: (see terminal current)
- Rated surge voltage: 2.5 kV
- Insulation resistance: 5MΩ
- Continuous operating temperature: 105°C
- Surrounding air (operating) temperature: 85°C
- Physical features: IP x8
- Unlimited storable gel, no hazardous material according to CLP
- Disposal: domestic waste
- Contact with skin: clean with water, no special cleaners necessary



Topic 5

Alternatives / competition



WAGO Gel Boxes for connectors

Alternatives / competition



Junction boxes
with resin



Mini Gel Boxes of other
manufacturers

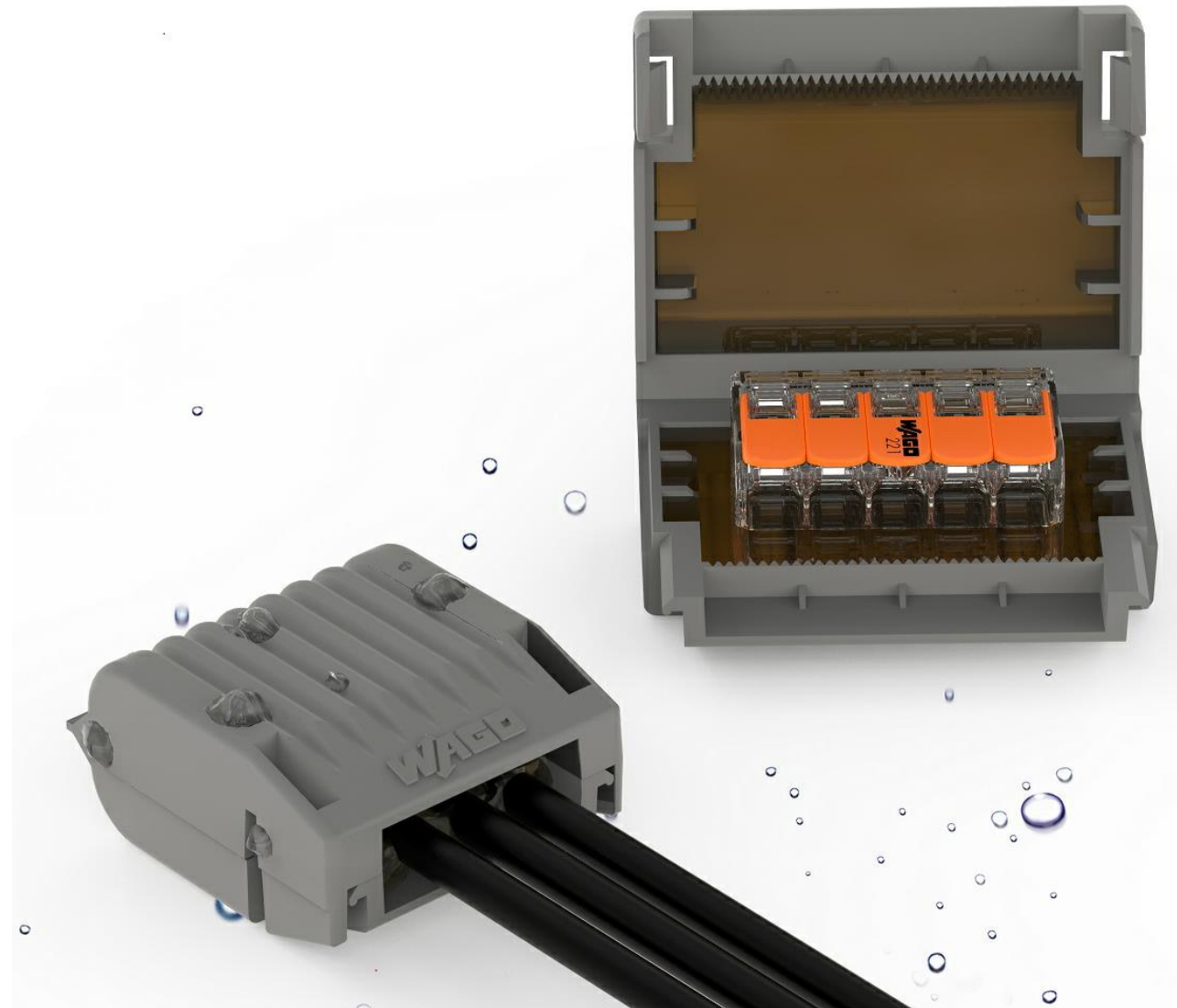


Gel filled connectors



Topic 6

Part numbers
Price
Availability



WAGO Gel Boxes for connectors

Part numbers/Price/Availability

Part number / Availability

Picture	Part number	Designation	Availability	Packaging	Price
	207-1331	Gel Box, IP x8, Serie 221, 2273, max. 4mm² connectors, size 1	May 2020	Small paper box 1-4 Gelboxes	Tdb. depends on packaging
	207-1332	Gel Box, IP x8, Serie 221, 2273, max. 4mm² connectors, size 2	May 2020		
	207-1333	Gel Box, IP x8, Serie 221, 2273, max. 4mm² connectors, size 3	May 2020		
	207-1431	Gel Box, IP x8, Serie 221, max. 6mm² connectors, size 1	June 2020		
	207-1432	Gel Box, IP x8, Serie 221, max. 6mm² connectors, size 2	June 2020		
	207-1433	Gel Box, IP x8, Serie 221, max. 6mm² connectors, size 3	June 2020		

WAGO