

## Contactless power transmission

FreeCon Contactless: high power density, maximum efficiency – maintenance-free and up to 240 W



## You are working on advancing your automation

We support you with a revolutionary solution

We are on the cusp of the “fourth industrial revolution”, where the virtual and the real world merge ever closer together. The industrial future will be shaped by highly individualised products. This requires highly flexible, largely automated and resource-efficient production, where customers and partners can be involved in ongoing value creation processes.

As “Industry 4.0” becomes increasingly automated, contactless energy transmission will continue to gain in significance. Why? Because unlike with conventional energy transmission with plug-in connectors, contactless energy transmission is fully automated and causes no mechanical wear whatsoever. This eliminates the need for time-consuming and costly maintenance work on the contacts, in addition to extending the service life and preventing downtimes. Furthermore, contactless energy transmission opens up completely new opportunities for automation and process optimisation.

With FreeCon Contactless, Weidmüller is the first company to present a new connection component for contactless energy transmission which was specially developed for extensive use in the industrial environment. The innovative system has optimised inductive resonance coupling technology. Thanks to innovative heat management, it transmits up to 240 watts with an extraordinary degree of efficiency of up to 93 percent. Its extremely compact design means that FreeCon Contactless can be used in virtually any environment. It can also be switched by means of PLC and can be integrated in a control program. Consequently, it satisfies all the requirements of a demanding industrial environment. With this wealth of advantages, FreeCon Contactless is meeting the requirements of future automation solutions today and is getting your production processes ready for “Industry 4.0”.



# Contactless power transmission – maintenance-free and up to 240 W

## High power density and maximum efficiency with small dimensions

Burnt, bent or dirty contacts are often the cause of timeconsuming and costly production failures. This is all the more true of applications requiring frequent plugging cycles. To name but one example, these include industrial robots performing frequent tool changes. Here, the level of wear is especially high. FreeCon Contactless allows power to be transmitted via an air gap by means of an inductive resonance coupling – it's a solution that's completely wear-free and especially efficient. Double the power density and a far higher degree of efficiency is achieved compared with comparable solutions that are available on the market.

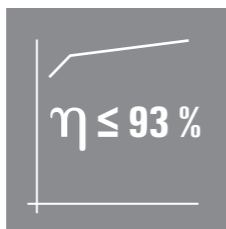
Thanks to FreeCon Contactless, you can avoid contactrelated failures and cut your maintenance costs considerably. It even opens up completely new areas of application, since for the first time ever an automated process can be used to establish a connection which previously would have to be plugged manually. The process of charging driverless transport systems, for instance, can be automated. Highmaintenance slip ring transmitters can be replaced too, since FreeCon Contactless securely transmits power even in the case of rotational movements.

### Wear-free electrical connection that can be switched as part of a controlled process

FreeCon Contactless enables reliable and contactless transmission of up to 240 W of power with compact dimensions and maximum efficiency. The transmission can even be controlled via PLC. It is therefore possible to switch 10 A directly via the PLC without the need for an additional contactor.

### High power density with maximum efficiency

For the first time ever, 240 W of power can be transmitted contactlessly via two especially small modules. Extremely low transmission losses translate into an efficiency level of up to 93 %



### Flexible mounting options

Fastening can optionally take place on three different sides by means of direct mounting on the relevant machine component, or by using a mounting bracket or a groove profile. This allows for maximum flexibility during installation.



### High flexibility thanks to unlimited approach options

The secondary side can be approached by the primary side from any direction. The connection is established as soon as both modules are positioned opposite one another. The connection remains stable even in the event of rotational movements.



### Complete protection against humidity and dirt

Unlike conventional plug-in connections, which only provide IP 20 protection when unplugged and are therefore unprotected, FreeCon Contactless offers IP 65 – permanently. So, with FreeCon Contactless, contacting problems caused by dirt are a thing of the past.



### Fast commissioning with PROFINET PushPull Power connection

Our proven standard plug-in connector for 24 V DC applications enables fast installation and ensures that the modules are provided with a secure and reliable supply.



# Drive automation forwards – the intelligent way

## FreeCon Contactless makes your applications more efficient on many levels

FreeCon Contactless was developed in close collaboration with leading German car manufacturers. The system is suitable for an extremely wide range of sectors, such as machine construction, robotics, materials handling and even renewable energy. It can be retrofitted with ease and is thus an appealing solution for existing plants, too. With this multitude of advantages, it helps to increase the level of automation and optimises the production process. And best of all, FreeCon Contactless does more than simply help to avoid contact-related failures and cut maintenance costs. Completely new designs and areas of application are possible with a view to optimising production processes.



The automotive industry makes use of applications that require frequent plugging cycles, such as industrial robots performing tool changes. They work with a variety of tools, which they independently change for different tasks – such as gripping or welding. The high level of wear that occurs on the mechanical plug-in connections can be avoided entirely with FreeCon Contactless. This saves both time and money in terms of contact maintenance and replacement, in addition to minimising machine failures caused by maintenance work or defects.

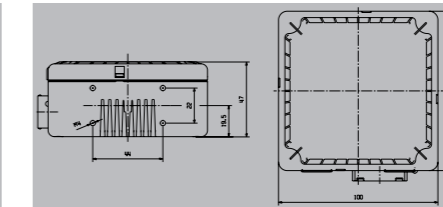


Automatic transport systems, which are a common feature of many warehouses and production halls nowadays, complete all work without mechanical support. A member of staff only has to be present to make the plug-in connection, which is required for charging the battery. FreeCon Contactless makes even this manual work step superfluous. The driverless transport systems move to the charging station independently just before the battery goes flat, at the end of the working day, or at shutdown periods. The result is effective time and cost savings, which means your investment pays for itself in no time at all.

### FreeCon Contactless

- Contactless power transmission via air gap

### Primary side (base)



### Technical data

General data	
Housing main material	Diecast zinc, painted, Cover PBT
Technologie, version	Inductive resonance coupling
Loads	Inductive and resistive loads
Turn-on time	1 s
Coupling time	
Air gap	0...5 mm
Centre offset	max. 5mm
Power interface	PROFINET PushPull Power
Protection degree	IP65
Ambient temperature (operational)	-20...45 °C Consider derating
Weight	1020 g
Electrical data	
Primary voltage	24 V DC (21.6...26.4 V DC)
Secondary voltage	
Secondary current max.	
Degree of efficiency	max. 91 %
LED indicator	Status indication via multi-coloured LED
Approvals	CE
Note	

### Ordering data

Type	Qty.	Order No.
IE-CL240W-PP-BASE	1	1547440000

### Note

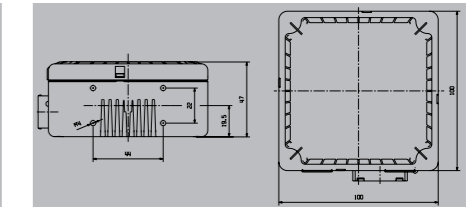
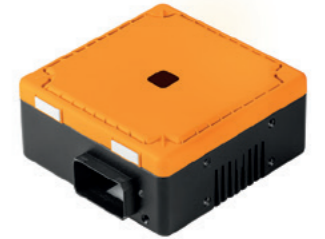
### Accessories

Plug	Type	Qty.	Order No.
	IE-PS-VAPM-5P-2.5	1	2465440000
Marking tags	ESG 6/17 K MC NE WS	200	1880120000

### Note

### Secondary side (remote)

24 V / 10 A



General data	
Housing main material	Diecast zinc, painted, Cover PBT
Technologie, version	Inductive resonance coupling
Loads	Inductive and resistive loads
Turn-on time	
Coupling time	< 500 ms
Air gap	0...5 mm
Centre offset	max. 5mm
Power interface	PROFINET PushPull Power
Protection degree	IP65
Ambient temperature (operational)	-20...45 °C Consider derating
Weight	1020 g
Electrical data	
Primary voltage	24 V DC (19.2...28.8 V DC)
Secondary voltage	10 A
Secondary current max.	max. 91 %
Degree of efficiency	Status indication via multi-coloured LED
LED indicator	
Approvals	CE
Note	

Type	Qty.	Order No.
IE-CL240W-PP-REMOTE	1	1547450000

Plug	Type	Qty.	Order No.
	IE-PS-VAPM-5P-2.5	1	2465440000
Marking tags	ESG 6/17 K MC NE WS	200	1880120000

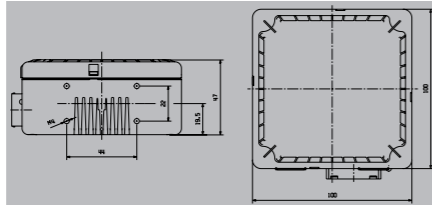
### Note

## FreeCon Contactless

- Contactless power transmission via air gap

## Secondary side (remote)

27 V / 5 A



## Technical data

### General data

Housing main material  
Technologie, version  
Loads  
Turn-on time  
Coupling time  
Air gap  
Centre offset  
Power interface  
Protection degree  
Ambient temperature (operational)  
Weight

Diecast zinc, painted, Cover PBT  
Inductive resonance coupling  
Inductive and resistive loads  
< 500 ms  
0...5 mm  
max. 5mm  
PROFINET PushPull Power  
IP65  
-20...45 °C Consider derating  
1020 g

### Electrical data

Primary voltage  
Secondary voltage  
Secondary current max.  
Degree of efficiency  
LED indicator  
Approvals

26,5 V DC (+/- 5%) (necessary voltage for secondary voltage must be ensured)  
27 V DC (±7 %)  
5 A  
max. 91 %  
Status indication via multi-coloured LED

### Note

## Ordering data

### Note

Type	Qty.	Order No.
IE-CL27V5A-PP-S	1	2623940000

## Accessories

### Plug

PushPull Power

Type	Qty.	Order No.
IE-PS-VAPM-5P-2.5	1	2465440000

### Marking tags

ESG 6/17 K MC NE WS	200	1880120000
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### Note

## **Weidmüller – Your partner in Industrial Connectivity**

As experienced experts we support our customers and partners around the world with products, solutions and services in the industrial environment of power, signal and data. We are at home in their industries and markets and know the technological challenges of tomorrow. We are therefore continuously developing innovative, sustainable and useful solutions for their individual needs. Together we set standards in Industrial Connectivity.

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