FreeCon Active
PROFINET POF Media Converter

IE-CDM-V14MRJSCP/VAPM-C
132444000

Hardware Installation Guide

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Weidmüller

Overview

The FreeCon Active Series supports PROFINET IRT with diagnosis functionality.

The devices provides 18 to 30 VDC power input that can be connected simultaneously to a live DC power source.. The IP65 metal housing makes them rugged enough for any harsh industrial environment.

Package Checklist

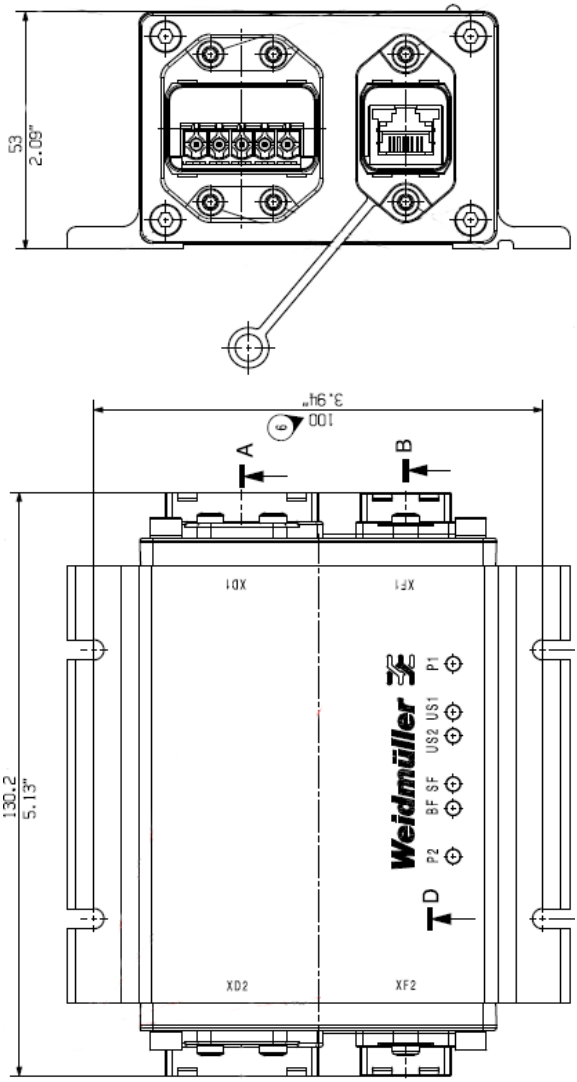
Your FreeCon Active is shipped with the following items. If any of these items are missing or damaged, please contact your Weidmüller customer service for assistance.

- FreeCon Active device
- Hardware Installation Guide (This document)

Features

- PROFINET IRT Repeater with diagnostic functions
- PROFINET Power Push Pull connector
- PROFINET Data PushPull connector with POF and RJ45
- Temperature range from -20 to 55°C
- Input voltage from 18 to 30 VDC
- Typical input current from 150 mA
- Power througput 2x24VDC/16A (at 20°C)
- IP65 metal housing
- Panel mounting ability

Mounting Dimensions (unit = mm)



Wall Mounting

Mounting the FreeCon Active on the wall requires 4 screws. Use the FreeCon Active device as a guide to mark the correct locations of the 4 screws. We recommend M4x10mm (or longer), torque 2,5 Nm.

Wiring Requirements

WARNING

Safety First!

Calculate the maximum possible current in each power wire and common wire. Observe all electrical codes dictating the maximum current allowable for each wire size.

If the current goes above the maximum ratings, the wiring could overheat, causing serious damage to your equipment.

You should also pay attention to the following points:

- Use separate paths to route wiring for power and devices. If power wiring and device wiring paths must cross, make sure the wires are perpendicular at the intersection point.
  NOTE: Do not run signal or communications wiring and power wiring in the same wire conduit. To avoid interference, wires with different signal characteristics should be routed separately.
- It is strongly advised that you label wiring to all devices in the system when necessary.

Pin Assignement:

1: L1 (24 VDC, US1+)

2: N1 (0 VDC, US1-)

3: L2 (24 VDC, US2+)

4: N2 (0 VDC, US2-)

5: FE (Functional earth)

Use power plug:

2465440000 / IE-PS-VAPM-5P-2,5

Grounding the Ethernet Switch

Grounding and wire routing help limit the effects of noise due to electromagnetic interference (EMI). Run the ground connection from the ground screw to the grounding surface prior to connecting devices.

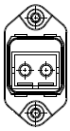
ATTENTION

This product is intended to be mounted to a well-grounded mounting surface such as a metal panel.

100BaseFX POF Ethernet Port Connection

The concept behind the SC port and cable is quite straightforward. Suppose you are connecting devices I and II; contrary to electrical signals, optical signals do not require a circuit in order to transmit data. Consequently, one of the optical lines is used to transmit data from device I to device II, and the other optical line is used transmit data from device II to device I, for full-duplex transmission.

Remember to connect the **Tx (transmit)** port of device I to the **Rx (receive)** port of device II, and the **Rx (receive)** port of device I to the **Tx (transmit)** port of device II.

TX  RX

ATTENTION

This is a Class 1 Laser/LED product. To avoid causing serious damage to your eyes, do not stare directly into the Laser Beam.

Use PushPull data plug:
1) 1191550000 IE-PS-V14M-2SC-POF
2) 1012170000 IE-PS-V14M-RJ45-FH-P

1) 

2) 

LED Indicators

The front panel of the Ethernet Switch contains several LED indicators. The function of each LED is described in the table below.

LED	Color	State	Description
US1/2	green	On	- Power is being supplied to power input P1/2.
		Off	- Power is not being supplied to power input P1/2.
BF	red	On	- Not connected to network. (FO1 and FO2) - Rx power alarm
		Blinking	- Not connected to IO controller - HW configuration error
		Off	- Connection established
SF	red	On	- FO transceiver not OK - Configuration error - Station name not assigned - IP number not assigned - FO attenuation < 2 dB
		Off	OK
P1/2	yellow	On	- TP port's 100 Mbps link is active.
		Blinking	- PROFINET IO Flash/Blink identification.
		Off	- No link - FO RX power out of range

Quick Start

Take the GSDML file and fit it in the PLC configuration (Standard procedure of PROFINET engineering)

OR

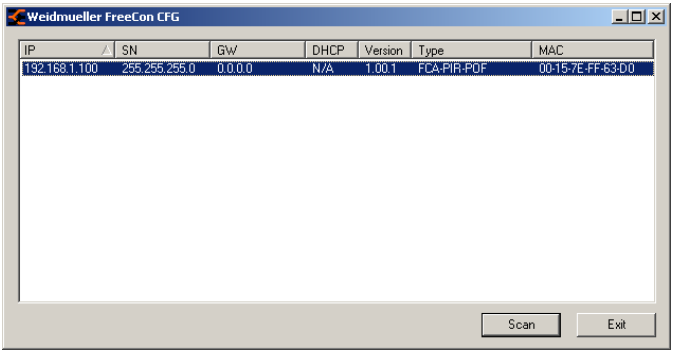
Access via Internet browser with default IP address 0.0.0.0

OR

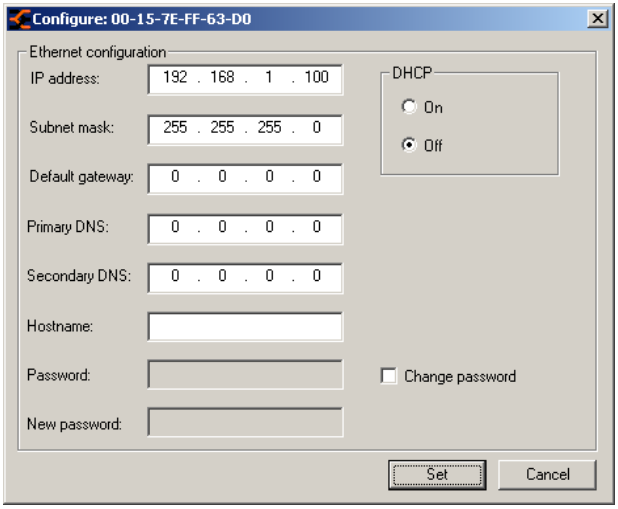
1: Connect Power PushPull to the power port of FreeCon

2: Connect Data (FO) PushPull to the data port of FreeCon

3: Start Config tool (FreeCon CFG) on your PC (which is connected to the same Profinet)



4: Click on IP-address to change it (the shown IP is a sample)



5: Push set buttom to adopt the new values

Actual Soft-/Firmware: www.weidmueller.de -> downloads -> software -> Industrial_Ethernet

Specifications

Technology

Standards	100BaseFX POF, PROFINET IRT

Interface

Fiber Ports	100BaseFX POF ports (PROFINET PushPull (V14) connector, POF)
RJ45 port	100BaseT (PROFINET PushPull (V14) connector RJ45)

Optical Fiber

	100BaseFX (POF)
	POF
Wavelength	650 nm
Max. TX	-2 dBm
Min. TX	-8,5 dBm
Min. RX Sensitivity	-23 dBm
Link Budget	15 dB
Typical Distance	50m*

* using P980/1000 POF cable (160dB/km)

Power

Input Voltage	18…30 VDC
Input Current	0,15 A/24VDC
Power throughput	2x24VDC/16A at 20°C
Connection	Power PushPull connector
Reverse Polarity Protection	Present

Physical Characteristics

Housing	IP65 protection, metal case
Dimensions	112x52x130mm
Weight	780g
Installation	Wall Mounting, 4x M4x10

Environmental Limits

Operating Temperature	-20 to 55°C
Storage Temperature	-40 to 70°C
Ambient Relative Humidity	5 to 95% (non-condensing)

Regulatory Approvals

Emission	EN 61000-6-4 Class A
ESD	EN61000-4-2 Level 3
RF	EN61000-4-3 Level 3
Burst	EN61000-4-4 Level 3
Surge	EN61000-4-5 Level 3
CRFI	EN61000-4-6 Level 3
Shock	IEC 60068-2-27
Hammer	IEC 60068-2-75
Vibration	IEC 60068-2-6

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Contact Information

Weidmüller Interface GmbH & Co. KG
Postfach 3030
32720 Detmold
Klingenbergstraße 16
32758 Detmold
Germany

Phone +49 (0) 5231 14-0
Fax +49 (0) 5231 14-292083
E-Mail info@weidmueller.com
Internet www.weidmueller.com