

*home amplifiers*



# about dktcomega

DKTCOMEGA develops optical and coaxial products for professional broadband operators and solution providers.

The company was founded in 1977. Its headquarters are in Denmark and it has subsidiaries in Sweden, Finland and China. As a dynamic and innovative company, its ambition is to deliver the best and broadest selection of quality products and advice when it comes to optical, coaxial and HFC broadband networks.

With more than thirty years of experience in coaxial broadband networks, DKTCOMEGA offers a comprehensive product portfolio, making it a strong partner for broadband operators. The solid experience gained by DKTCOMEGA is reflected in its products, these being characterized by high quality, top performance and easy installation.

The broad product range covers everything required for access and home networks, thereby satisfying all needs when building and maintaining today's modern broadband networks. As a result, customers turn to DKTCOMEGA for products and advice when it comes to optical, coaxial and HFC broadband networks.

## **DKTCOMEGA's mission**

DKTCOMEGA's mission is to be a strong partner in network products for European broadband operators and solution providers. Based on know-how and natural enthusiasm, good ideas are developed into successful products. This is done with the customer, who furthermore appreciates the broad product range, the attractive quality/price level and the unique customized products. DKTCOMEGA's flexibility and proactive attitude assists in optimizing broadband networks.

For further information please contact DKTCOMEGA at [sales@dktcomega.com](mailto:sales@dktcomega.com)

**DKT**COMEGA

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# product introduction

## Introduction

The DKTCOMEGA line of high quality amplifiers complements the range of home installation products. Many of today's households have multiple television sets or flat screens. It is often the case that the network cannot supply the necessary signal quality to ensure a clear picture. The result is unclear or flickering pictures. The DKTCOMEGA line of home amplifiers can provide the required extra signal power. These amplifiers meet all the requirements demanded for quality signal distribution and return path applications.

## Overview

There are five series of amplifier designs: CombiAmp (CA) which is the latest series of interactive amps, DA for line extension or indoor distribution, push-on series for Do-It-Yourself applications, Active Outlets (AO) and MC series for TV/FM amplification.



The CA series is developed for multi-service operators with coaxial distribution and multiple interactive services such as digital TV and data. The amplifier is optimized for a combination of interactive services. It has the possibility to connect two modems/Set-Top-Boxes (STBs) and a traditional TV/FM in house distribution with the possibility to connect to four rooms/outlets. The unique combination of bi-directional amplification and TV/FM distribution ensures optimized installation and maintenance. The series can be customized upon request.



The DA series of DKTCOMEGA indoor amplifiers is optimized for digital and analogue signals (forward and active return) on all outputs, 1 to 8. This series can significantly improve signal quality for up to eighty percent of all subscribers. The amplifiers have up to eight output taps, an equalizer and an attenuator, which are integrated to ensure a correct combination. In today's amplifier market, it is only the CA and DA series that satisfy CENELEC's recommendation regarding isolation between outputs.



The "Push-On" series (POF and POA) is optimized for Do-It-Yourself and extraordinary fast up grades. These connect to standard outlets to enhance the signal and add interactive services. This is an ideal way to easily and quickly expand an existing local installation. It also minimizes the number of required technical service visits, mainly because the amplifier can be sent to the subscriber who then performs the installation by following a few simple instructions. The existing TV/FM outlets can be quickly expanded, for example into TV/FM/DATA with amplification.



The AO series of active outlets are amplifiers built into a wall outlet. These present an alternative way to expand and/or upgrade the network to handle interactive services. The series can be used to extend the signal and to add services in an elegant way with a minimum of products in the household. The AO series will simply look like a traditional outlet just with amplification, filtering and signal distribution built into the products. This is the most discrete solution on the market with the usual extraordinary high quality that characterizes the DKTCOMEGA brand.



Finally, the MC amplifier series, which is optimized for Multi-Channel TV/FM distribution in the forward path. DKTCOMEGA focused on easy mounting, output levels and noise figures when developing this series of amplifiers. This resulted in two genuine amplifiers for CATV applications with a very high output level. The amplifiers are made for forward path applications, but can be combined with other equipment to comply passively with return path services.



## Advantages

- Amplifier, Tap, Filter, Equalizer and Attenuator in one, optimized for interactive multi-services
- 2 dedicated ports for data with bi-directional amplification which optimizes signal quality
- Elegant Danish design that fits into a modern household
- State-of-the-art electrical design in compliance with CENELEC recommendations
- Minimized maintenance and troubleshooting

# ca amplifiers with return path

## Product information

The CA amplifier is a universal amplifier with a very high quality that combines a tap, an amplifier and filters into a single unit. This handles multi-service distribution in any household with minimum effort.



Along with the DA series, this is the only home amplifier that combines a bi-directional amplifier with an in-house distribution unit in compliance with the CENELEC recommendations, for example concerning isolation between outputs, screening and return loss. This combination makes the CA series a state-of-the-art home amplifier for modern broadband networks, resulting in reduced installation cost and minimized maintenance and troubleshooting.

The amplifier is designed to simultaneously handle two Set-Top-Boxes (STB)/ Modems without cross-talk and for distribution to four TV/FM outlets. This makes it ideal for modern broadband home installations. The combination of tap, filter and amplifier makes it impossible to combine these units in an incorrect manner and ensures that quality is maintained for modern broadband with a high isolation, return loss, screening efficiency, Noise figure and CTB/CSO. This unit will optimize both installation and maintenance in the network, making it easier for installers, operators and subscribers.

Type	CA 2R4F
Item no.	46227
<b>Data</b>	
Frequency forward DATA 1-2 (MHz)	87 - 1000
Gain forward DATA 1-2 (dB)	1dB ( $\pm 1$ dB)
Frequency reverse DATA 1-2 (MHz)	5 - 65
Gain reverse DATA 1-2 (dB)	0dB ( $\pm 1,5$ dB)
Isolation IN - DATA 1,2 (dB) 5-65 MHz	> 35
Isolation DATA, DATA (dB) 5-65 MHz	> 40
Isolation DATA, DATA (dB) 118-862 MHz	> 32
Isolation DATA, DATA (dB) 862-1000 MHz	> 28
Isolation DATA, TV (dB) 5-65 MHz	> 50
Isolation DATA, TV (dB) 87-1000 MHz	> 30
Input level IN - DATA 1,2 87-1000 MHz	47-75dB $\mu$ V
Input level DATA 1,2 - IN 5-65 MHz	Typ. 112 dB $\mu$ V (95-119)
Connector	F-female
<b>TV Output</b>	
Attenuator forward (dB) 87-1000 MHz	0 / 5 / 10
Frequency TV 1-4 (MHz)	87 - 1000
Gain TV 1-4 (dB)	7 ( $\pm 1,5$ )
Input level IN - TV 1,2,3,4 87-1000 MHz	60-77dB $\mu$ V
CTB and CSO (dB)	> 60*
Isolation TV, TV (dB) 87-300 MHz	> 40
Isolation TV, TV (dB) 300-1000 MHz	> 32
Connector	F-female
<b>Other</b>	
Equalizer forward (dB) 87-862 MHz	0 / 3 / 6
Noise figure forward (dB)	4,5
Noise figure reverse (dB)	6
Power	6 VDC 450 mA
Return loss on all ports**	EN50083-4 Cat. B

\* At 85dB $\mu$ V output level

\*\* According to CENELEC:  
5-40 MHz  $\geq 18$  dB, 40-862 MHz min. 18 dB  $\div 1,5$ /oct.





## Advantages

- Extraordinarily good specifications - vital for local-install
- Easy to install and use - suitable for Do-It-Yourself solutions
- Perfect balance between amplification and output levels
- Switch equalizer and attenuator: 0 / 5 / 10 dB
- Optimized for modem use with active or passive return path
- Suitable for HDTV and large screens which require an increased network quality

# da amplifiers with/without return path

## Product information

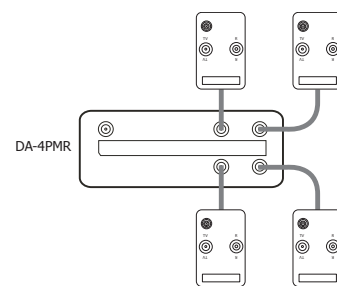
DKT introduces the next generation of supreme quality indoor amplifiers for digital and analogue signals. It will lighten the load of installation workers and improve the viewing quality for up to eighty percent of all subscribers. The amplifier series has an integrated splitter, equalizer and attenuator, making a wrong combination between the three parts impossible. At the same time it is the market's only amplifier along with the CA series that complies with CENELEC's recommendation for isolation between outputs.

The most used model in the series of amplifiers has four outputs, but it is also available in a version with eight outputs and with active or passive return paths in all outputs. Equalizer and attenuator are realised as a three point switch, which makes initial adjustment quick and easy. Contrary to many discount products, the amplifier series also has an effective shielding, which prevents noise from entering the system.

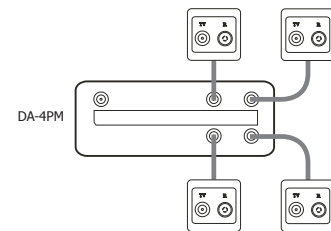
There is a high isolation level between the ports, ensuring both a high return loss on all outputs so that older TV sets do not disturb newer flat screens. The series of amplifiers has a high intermodulation distance, which ensures that TV channels do not disturb one another.



TV/R/DATA



TV/R



Type	Gain forward	Gain return	Recommended output level	Maximum input return path	Noise figure	Item no.
DA-4PM	40 - 1000 MHz 4 x 6 dB	-	68 - 84 dB $\mu$ V	-	4,5 dB	46233
DA-8PM	40 - 1000 MHz 8 x 5 dB	-	68 - 82 dB $\mu$ V	-	5,0 dB	46235
DA-1PMR	87 - 1000 MHz 1 x 21 dB	5 - 65 MHz 15 dB	82 - 97 dB $\mu$ V	100 dB $\mu$ V	5,5 dB	46237
DA-4PMR	87 - 1000 MHz 4 x 6 dB	5 - 65 MHz 0 dB	68 - 84 dB $\mu$ V	116 dB $\mu$ V	5,5 dB	46238
DA-8PMR	87 - 1000 MHz 8 x 5 dB	5 - 65 MHz -1 dB	68 - 82 dB $\mu$ V	117 dB $\mu$ V	6,0 dB	46239

Built-in power supply: 230 VAC/4 SW  
 CTB/CSO: > 60 dB with 42-channels CENELEC  
 According to CENELEC: 5-40 MHz  $\geq$  18 dB, 40-862 MHz min. 18 dB  $\div$  1,5/oct.  
 Port - port isolation: VHF < 40 dB UHF < 40 dB

Typically 1-2 dB lower gain can be expected in the 862-1000 MHz range.



## Advantages

- Simple and quick snap-on mounting ensures low cost installation
- Multiple DATA and TV-OUT connectors to satisfy gain demands
- Slim design allows access to adjacent outlets
- Complete package including power supply
- Complies with CENELEC standards and satisfies industry demands



# freja push-on, active distribution, multimedia

## Product information

These multimedia push-on active amplifiers can be mounted on any outlet to ensure appropriate signal strength and quality in an extended network.

Using a simple snap-on design, it is a true Do-It-Yourself installation. The adapter fits snugly onto all outlets. This narrow form factor ensures that adjacent outlets are not obstructed and can still be easily accessed.

Each unit has two DATA outputs, two TV outputs and a single FM output. The unit includes a compact power supply, which is characterized by low power consumption (less than 1,2 W). A complete installation package with minimal operating and maintenance costs.



Type	POA-TFD
Item no.	42116
<b>Data</b>	
Frequency forward (MHz)	118-1000
Gain Forward DATA 1, 2 (dB)	0,0
Output level* DATA 1, 2 (dB $\mu$ V)	89
Frequency - reverse (MHz)	5-65
Gain Reverse DATA 1, 2 (dB)	0,5
Maximum input return path (dB $\mu$ V)	119
Isolation DATA 1, 2 / TV 1, 2 (dB) 5-65 MHz	> 50
Isolation DATA 1, 2 / TV 1, 2 (dB) 118-1000 MHz	> 22
Isolation DATA 1, 2 (dB) 5-65 MHz	> 40
Isolation DATA 1, 2 (dB) 118-700 MHz	> 23
Isolation DATA 1, 2 (dB) 700-862 MHz	> 20
Connector	F-female
<b>TV Output</b>	
Frequency (MHz)	118 - 1000
Gain TV 1 (dB)	1,0
Output level* TV 1 (dB $\mu$ V)	90
Connector	IEC-male
Gain TV 2(dB)	3,5
Output level* TV 2 (dB $\mu$ V)	89
Isolation TV 1, 2 (dB) 118-1000 MHz	> 25
Connector	F-female
<b>FM Output</b>	
Frequency (MHz)	87,5 - 108
FM out (dB)	-0,2
Connector	IEC-female
<b>Other</b>	
Noise Figure (dB)	4
Power	6 VDC 200 mA
Power consumption (W)	< 1,2
Return loss on all ports**	EN50083-4 Cat. B

Radiation: < 20 dBpW/0,03 - 1 GHz, compliant according to EN50083-2

\* CTB/CSO > 60 dB with 42-channel CENELEC

\*\* According to CENELEC:

5-40 MHz  $\geq$  18 dB, 40-862 MHz min. 18 dB  $\div$  1.5/oct.



## Advantages

- Suitable for Do-It-Yourself concept
- Increases installer efficiency
- Ideal for return path services
- Allows extra TV and/or VCR

# push-on amplifier, active distribution

## Product information

The extra loss arising from data filtering cannot be tolerated in many existing CATV networks. This can cause problems with the signal level.

These problems can be resolved with the active version of the DKTCOMEGA push-on filter. With a built-in forward amplifier designed with a high output level, it is possible to compensate for the extra loss from filtering/taps in the forward path. The return path in the active version is designed with diplexers, resulting in very low loss on return path transmissions (no return path in PA2TA).



**A**  
CLASS

	POF - PA 1	POF - PA 6	POF - PA2TA
Item no.	42110	42113	42112
<b>Data</b>			
Frequency forward (MHz)	118 - 1000	118 - 1000	-
Frequency - reverse (MHz)	5 - 65	5 - 65	-
Gain Forward (dB)	2,0	8,0	-
Output level* (dBμV)	90	90	-
Insertion loss reverse	-0,6 dB (±0,5 dB)	-0,6 dB (±0,5 dB)	-
Isolation DATA/TV OUT 1,2,3 (5-65 MHz)	50 dB	50 dB	-
Isolation DATA/TV OUT 1,2,3 (118-470 MHz)	30 dB	30 dB	-
Isolation DATA/TV OUT 1,2,3 (470-1000 MHz)	27 dB	27 dB	-
Connector	F-female	F-female	-
<b>TV Output</b>			
Frequency (MHz)	118 - 1000	118 - 1000	47 - 1000
Gain TV 1 (dB)	1,0	6,5	2,5
Output level* TV 1 (dBμV)	89	89	85
Gain TV 2 (dB)	0,0	5,5	2,0
Output level* TV 2 (dBμV)	88	88	84
Gain TV 3 (dB)	-	-	14,0
Output level* TV 3 (dBμV)	-	-	97 dBμV
Isolation TV OUT 2/ TV OUT 1 (118-1000 MHz)	30 dB	30 dB	-
Isolation TV/FM OUT 3 > TV/FM OUT 1.2/FM Out	-	-	> 30 dB
Isolation TV/FM/OUT 1 - TV/FM/OUT 2 - FM/Out	-	-	VHF > 42 dB UHF > 36 dB
Rejection TV Out 2 / TV In (5-65 MHz)	45 dB	45 dB	-
Connector	IEC-male	IEC-male	F-female
<b>FM Output</b>			
Frequency (MHz)	87,5 - 108	87,5 - 108	87,5 - 108 MHz
Gain (dB)	-	-	0,5
Output level* (dBμV)	-	-	84
Insertion loss (dB)	-0,6 (±0,5)	-0,6 (±0,5)	-
Isolation FM OUT/ FM IN (5-65 MHz)	30 dB	30 dB	-
Connector	IEC-female	IEC-female	F-female
<b>Other</b>			
Attenuator (dB)	-	-	0 / 3 / 6
Equalizer (dB)	-	-	0 / 3 / 6
Noise Figure (dB)	4	4	4
Power	230 VAC / 6 VDC / 70 mA	230 VAC / 6 VDC / 70 mA	230 VAC / 6 VDC / 70 mA
Return loss on all ports**	EN50083-4 Cat. B	EN50083-4 Cat. B	EN50083-4 Cat. B

Radiation: < 20 dBpW/0,03 - 1 GHz, compliant according to EN50083-2

\* CTB/CSO > 60 dB with 42-channel CENELEC

\*\* According to CENELEC:

5-40 MHz ≥ 18 dB, 40-862 MHz min. 18 dB ÷ 1.5/oct.

