

**promarine**

Interference free communications

# promarine

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7. **Bandpass and interference rejection**

Trusted at Sea –  
Proven in Defense

**STAY CONNECTED**

**STAY PROTECTED**



# Our story

2005

2014

2022

2025

## INTERFERENCE FREE COMMUNICATIONS

Promarine Jani Järvinen founded Promarine in 2005 to help leisure boaters and professional seafarers to establish secure communications, and to avoid co-site interference on the bridge.

## STAY CONNECTED

Introduction of proTAC5311 paves the way for Promarine's name as a synonym for truly wideband antennas with seamless frequency coverage covering 2G, 3G, 4G, 5G, LTE, WiFi and beyond.

## STAY PROTECTED

War in Europe has shown the importance of C-UAS capabilities. Combat proven proTAC5311 and proTAC5315 antennas provide unmatched efficiency maximizing the performance of the life saving RF jammers.

## TRUSTED AT SEA – PROVEN IN DEFENSE

Our integrated approach has shown its strength when fighting against malignant external GNSS jamming and spoofing by robust antenna design and intelligent GNSS monitoring technology

# Product lines



## proISO™ Galvanic isolators

Galvanic isolator product line removes ground loops and ground leaks



## proGPS™ GNSS signal splitters

High performance GNSS signal splitters to reduce interference and maintain signal integrity



## proFIL™ antenna filters, splitters and combiners

Power splitters, active splitters, antenna combiners, co-site filters



## proTAC™ antennas

High performance and robust antennas for communications, and jamming. VHF, UHF, 4G,5G, GNSS, WIFI...

pro ISO™

pro GPS™

pro FIL™

pro TAC™

# Product lines



## proMTX™ antenna switch matrixes

For remote and intelligent antenna switching on complex communication systems



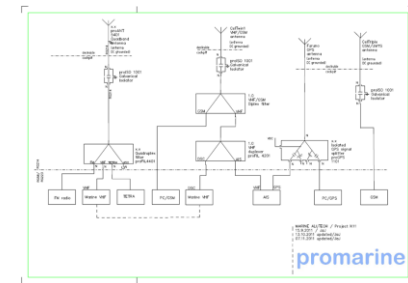
## proATT™ antenna attenuators

Remotely controllable attenuators that allows communications in ex environments or limits power when needed



## proANT™ antennas

4G/5G MiMo antennas, TV antennas for commercial and leisure applications



## proEMS™ services

Professional design support, commissioning and troubleshooting services

pro MTX™

pro ATT™

pro ANT™

pro EMS™

# Product lines



## proFIL™ DC noise filters

For cleaning power system from unwanted noise signals and to meet EMC specs



## proTRF™ antenna transformers

Passive matching of MF/HF antennas with various transformers

2025

2026

2027

## GNSS situational awareness system

## CRPA

pro FIL™ pro TRF™



# Promarine

Combat proven C-UAS antennas

STAY PROTECTED

proTAC™



proTAC™ 5311, 5315

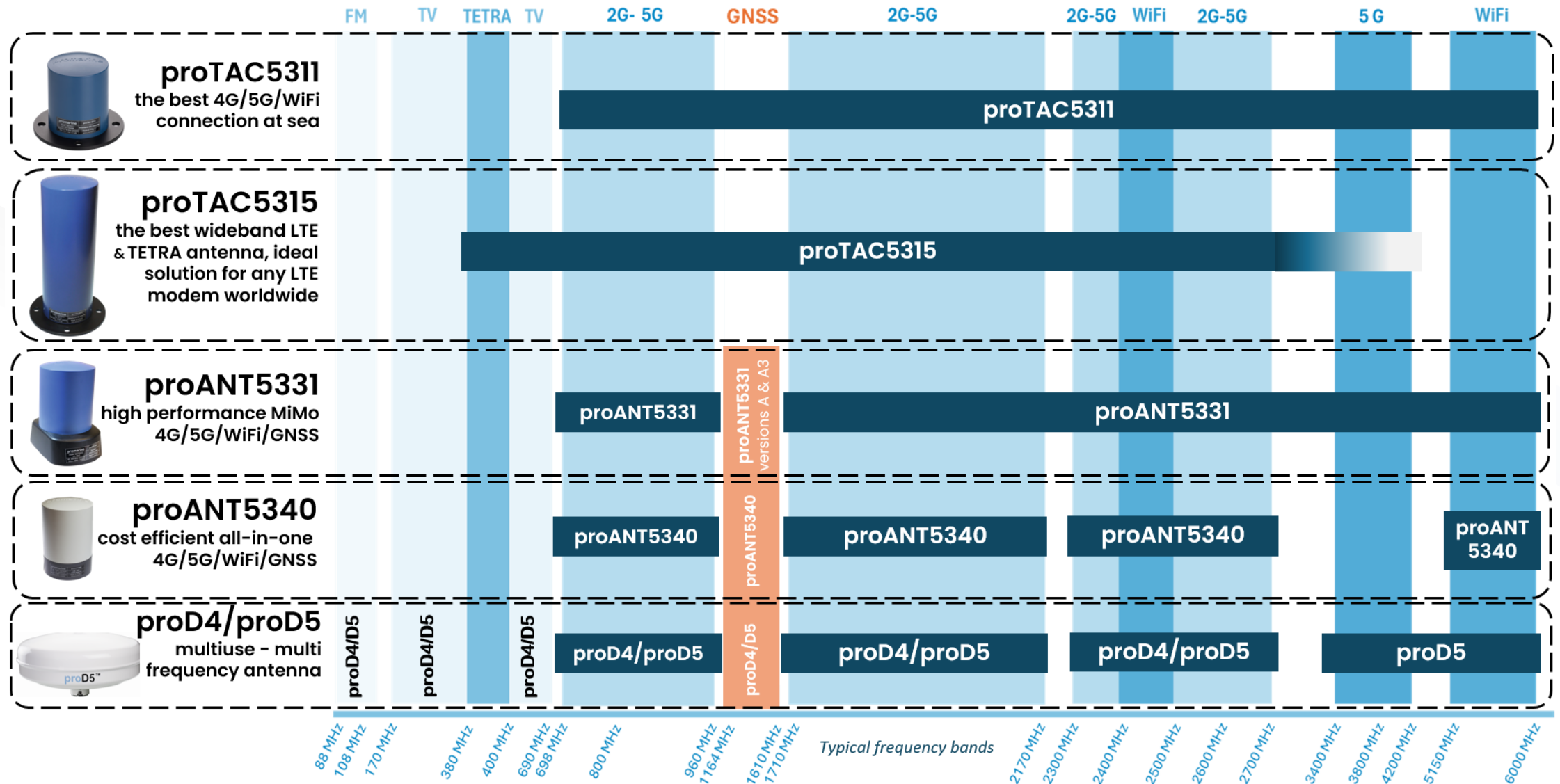
300MHz - 6GHz

Truly wideband antennas with extremely high power handling capability and 360° omnidirectional radiation efficiency. Seamless frequency coverage maximizes the performance of the RF jammers terminating the command link between the drone and its operator or blocking the GNSS navigation frequencies from the drone. In addition to the reliable C-UAS protection, Promarine's proTAC antennas can also be used against Radio Controlled IEDs.

Trusted at Sea – Proven in Defense



## Promarine wideband antenna operating frequency matrix



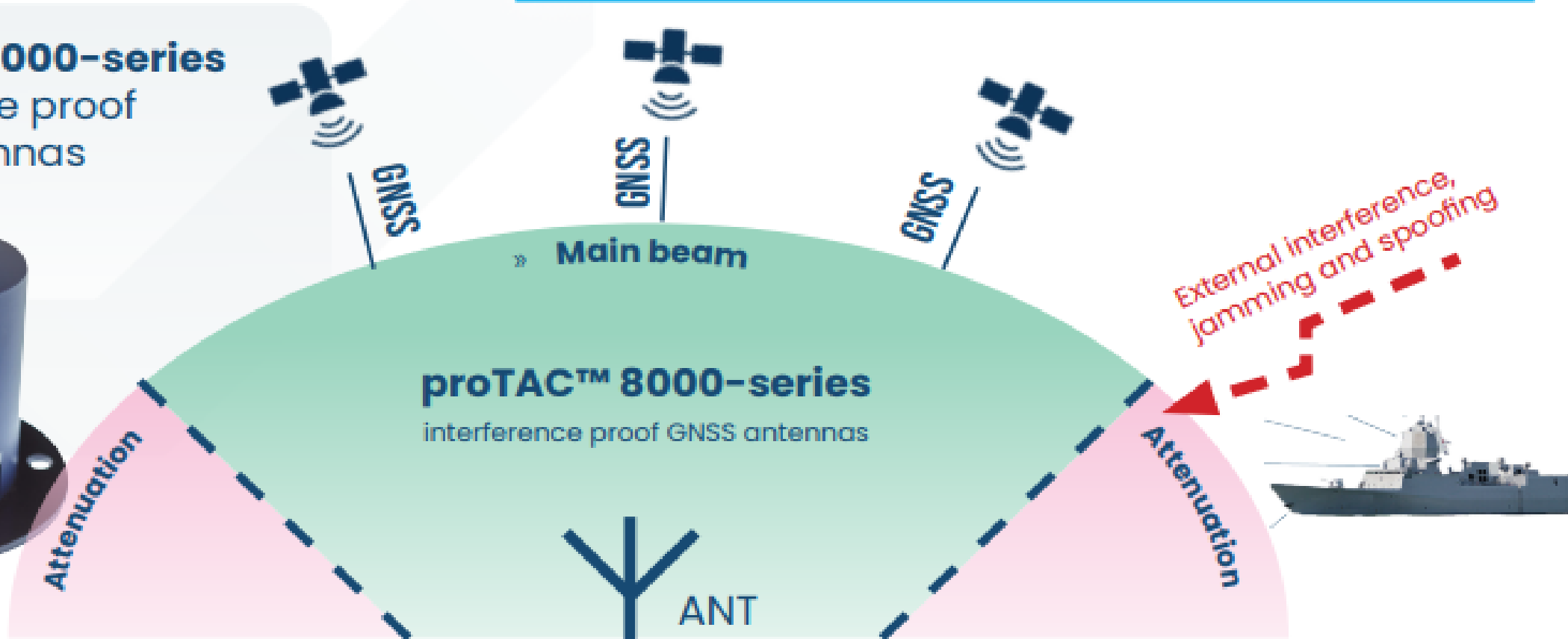
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MADE IN FINLAND

# INTERFERENCE PROOF GNSS SOLUTIONS AGAINST JAMMING AND SPOOFING

**proTAC™ 8000-series**  
interference proof  
GNSS antennas



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proTAC™ proGPS™

proGPS™ GNSS signal splitters  
proGPS™ GNSS anti-spoof  
&  
anti-jam receivers

Interference free communications

**proGPS™ 1000-series**  
active GNSS signal splitters



**proGPS™ 1000-series**  
Strong filtering

**proGPS™ 2000-series**

**proGPS™ 3000-series**

OR

**proGPS™ 3000-series**  
GNSS monitoring platform



**proGPS™ 2000-series**  
multiband GNSS receivers

NMEA  
Position and  
1 PPS timing

NMEA  
Position and  
1 PPS timing

HDMI + Ethernet

**External display**  
GNSS situational awareness  
information, visualization  
and warnings



Watercat M18#Marine Alutech



Interference free communications

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## Field proven GNSS monitoring and situational awareness platform



## STAY CONNECTED

## proGPS™

### proGPS™ 3100

Promarine's interference proof GNSS solutions for precise location & timing, resilient against jamming & spoofing, guaranteed situational awareness.

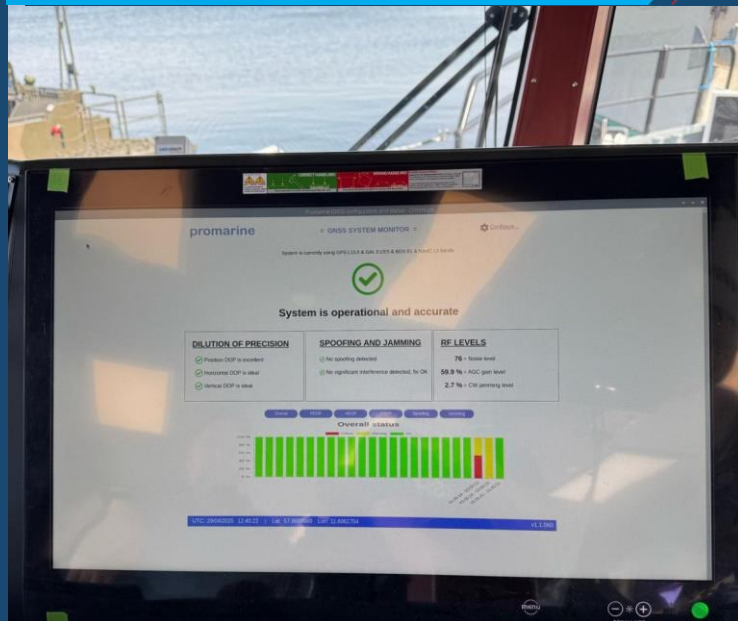
Build your networked nationwide GNSS status monitoring system — or enhance situational awareness and safety on board your mission-critical assets.

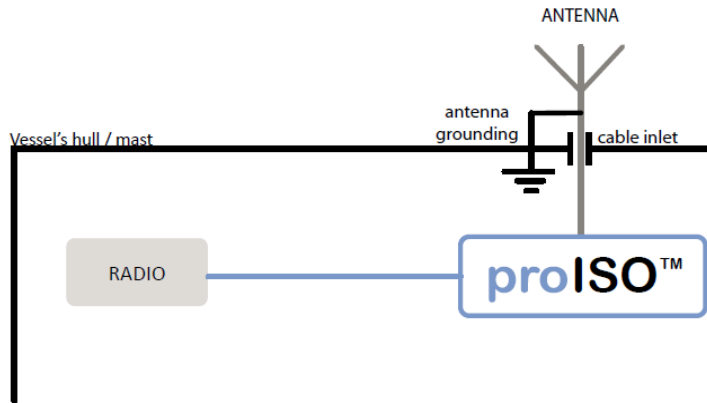
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**NEW!** proGPS3100

Real-time GNSS environment context detection with threat analysis





## proISO1001 GALVANIC COAXIAL LINE ISOLATOR FOR 100MHZ-1GHZ BAND

## proISO1002 DROP-IN GALVANIC COAXIAL LINE ISOLATOR FOR MARINE VHF RADIOS 100-200MHZ

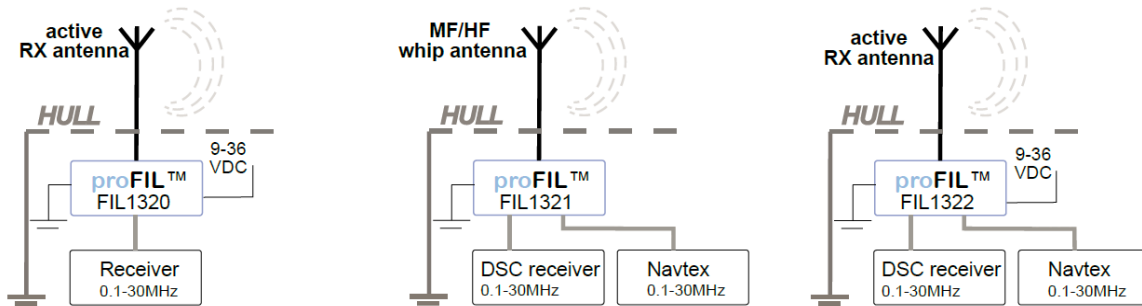
- Galvanic coaxial line isolators for DC-grounded antennas solve ground leaks and interference problems in communication system
- Can be easily used between antennas, filters, radios and amplifiers without losing sensitivity of the communication system
- Prevents ground loops and increases performance

*fast deployment in retrofits  
suitable for all radios and antennas  
static discharge protection  
breaks ground loops  
minimizes interference  
makes EMP and EMI protection easy  
fully passive construction  
no wearing components  
compact size with flexible cables*

## Promarine's Galvanical Isolation Technology

## proFIL 1320 / 1321 / 1322 MF / HF DSC POWER INJECTOR/SPLITTER

### Connection example



DSC Antenna splitters are an alternative to speed up new receiver installations and save topside space with reduced number of antennas.

Change your existing antenna power supply with our galvanic isolated low noise design for better performance.



**Promarine's Galvanical Isolation Technology**

## proFIL 1320 ISOLATED MF/HF DSC AND NAVTEX/WEATHER FAX ANTENNA (0.1 MHz-30MHz)

- Power injector
- Isolated DC feed to antenna 12V - Intended to be used when MF/HF DSC receiver or Navtex receiver is connected to an active receive antenna and receiver itself cannot source power to antenna

## proFIL 1321 ISOLATED MF/HF DSC (0.1 MHz-30MHz) AND NAVTEX/WEATHER FAX PASSIVE ANTENNA SPLITTER

- Receive only, no power feed
- It can be used to split any 0.1-100 MHz antenna with two receivers.

## proFIL 1322 ISOLATED MF/HF DSC AND NAVTEX/WEATHER FAX ACTIVE ANTENNA SPLITTER WITH POWER INJECTOR

- Isolated DC feed to antenna 12V - splits an active Navtex antenna (0.1 MHz-30 MHz) with Navtex and WeatherFax receivers or MF/HF DSC receivers.
- Can be used to split any active Navtex antenna that tolerates +10VDC voltage from the receiver

## High attenuation low-pass /band-pass filters

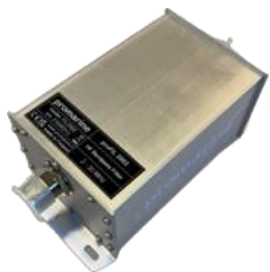


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proFIL™

The utilization of low-pass and band-pass filters helps preventing the transmission of unwanted spurious or harmonic signals typically generated inside transmitter itself.

Other benefits are significantly reduced electromagnetic signature, reduced risk for front-end overload of nearby receiver and a reduced risk for passive intermodulation of radios.



proFIL™ 2002  
Band pass filter 2-30MHz



proFIL™ 2012  
Low pass filter 0,1-88MHz



proFIL™ 3020  
Band pass filter 150-170MHz



proFIL™ 3040  
Band pass filter 225-400MHz



proFIL™ 3240  
Dual band pass filter inc diplexer and  
two separate pass bands for 30-  
88MHz and 225-400MHz

# DC power line filters

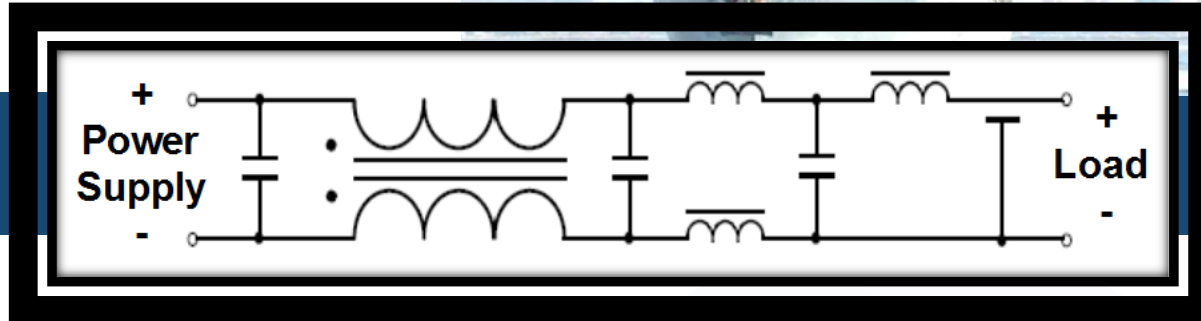
## DC power line filters

- Removing interference from DC power lines
- Switching power supplies
- DC motor sparking
- Lightning, electrical drives and communication gateways
- Help users to meet various EMC-standards.
- Up to 50 V and 20A
- Passive filtering



STAY CONNECTED

proFIL™



### proFIL™ 0120

Designed for use in DIN-Rail installations



Specifications (T <sub>A</sub> =25°C)	
Model	proFIL 0120
Maximum Voltage/Current	50 VDC / 20 A
Interference rejection	Common mode attenuation: 400kHz – 100MHz: 15dB minimum Differential mode attenuation: 1MHz – 1GHz: 35dB minimum
Connectors / Terminals	Screw terminals 4mm <sup>2</sup>
Resistance to ground	Insulated plastic body
Static discharge protection	N/A
Added capacitance	5uF

### proFIL™ 0121

Designed for use in cable tray installations



Specifications (T <sub>A</sub> =25°C)	
Model	proFIL 0121
Maximum Voltage/Current	50 VDC / 13 A
Interference rejection	Common mode attenuation: 400kHz – 100MHz: 15dB minimum Differential mode attenuation: 1MHz – 1GHz: 35dB minimum
Connectors / Terminals	Deutsch DT04-2P connectors
Resistance to ground	Insulated plastic body
Static discharge protection	N/A
Added capacitance	5uF

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