

## Product Information

### Antenna Distributor AVB Series 1.5 – 30 MHz

The Antenna Distribution System AVB is a very flexible distribution solution for short wave communication applications.

The AVB series is furnished into a single 19-inch 2 HU slide-in unit, so its small footprint allows for flexible integration into the application environment.

The AVB series covers the frequency range from 1.5 MHz to 30 MHz providing the non-blocking switching distribution of up to 4 antenna inputs to max 20 receiver outputs.

The AVB series can be powered from a standard AC and/or DC (battery) mains supply.

The **AVB 10** variants are available in various configurations with 1 - 4 inputs and up to **10 outputs**.

The **AVB 20** variants are available in various configurations with 1 - 4 inputs and up to **20 outputs**.



- Flexible configuration to meet application needs
- Fast input to output switching
- Switchable input attenuator (automatic – 0dB – 6dB – 20dB)
- Input protection 2 kV 50  $\mu$ s
- Monitoring of active antennas, preamplifiers, and channel amplifiers
- Number of inputs and outputs according to customer requirement
- Special preamplifiers available for limitation of frequency range or passive bypass
- No restriction concerning the antenna selection

## Technical Data

Parameter	Data
Dimension slide-in unit (w x h x d)	19" 2 u, 360 mm
Weight	approx. 7 kg, depends on configuration
Colour of Front Panel	RAL 7035 (light grey)
Mains Supply	max. 85 – 264 Vac, 50 - 60 Hz
Power Consumption	typ. 45 VA, depends on configuration
DC (Battery) Supply (optional)	max. 18 – 36 Vdc max. 4,5 A (ground free)
Ambient Temperature	-10°C ... +60°C (IEC 60945)
Storage Temperature	-20°C ... +70°C (IEC 60945)
Relative Humidity <sup>(1)</sup>	95%, +20 ... +55° C, (IEC 60945)
EMC / EMI	Immunity EN 61000-6-2 Emission EN 61000-6-3
Vibration	5Hz – 13,2Hz; +/- 1,0mm 13,2Hz – 100Hz; 0,7g IEC 60068-2-6
Shock	10 g, 6 ms, half sine
MTBF	21.000 h (unit fully equipped) 19.000 h (unit fully equipped)
MTTR (replacement of subunits)	0,5 h

Data given are typical values, depends on device configuration  
 Design and specification are subject to change without prior notice, errors excepted.

## HF Data

Parameter	Data
Antenna Inputs	max. 4 (N-Socket)
Input Impedance	50 $\Omega$ VSWR < 1,4
Maximum Signal Level CW	37 dBm (5W)
Input Protection	2 kV 50 $\mu$ s
Receiver Outputs (AVB 10)	max. 10
Receiver Outputs (AVB 20)	max. 20
Output Impedance	50 $\Omega$ VSWR < 1,5
Frequency Range	1.5 ... 30 MHz
Gain	2,5 dB
Noise Figure	8,0 dB
Intercept Point IPOP2	58 dBm
Intercept Point IPOP3	37 dBm
1 dB Compression	16 dBm
Decoupling between two outputs	60 dB
Decoupling between output and input <sup>(2)</sup>	80 dB
Crosstalk between two inputs	36 dB
Switching Time	typ. 1 ms

Note 1:  
 Relative humidity valid for the front panel, non-condensing

Note 2:  
 Not applicable for preamplifiers with passive bypass (e. g. PA LB1)

Data given are typical values, depends on device configuration  
 Design and specification are subject to change without prior notice, errors excepted.

## Scope of Supply

Pos.	Description
1	Antenna Distributor AVB ...
2	Accessory Set ZS xx (depends on AVB configuration)
3	USB stick with product documentation in pdf format

## Accessories for AC and DC powered AVBs

Type Designation	Part No.	Description
ZS 14	0028.3714.00	Accessory set for use with AC and DC powered AVBs, 1 input consisting of <ul style="list-style-type: none"> <li>- 1 ea. N male plug, Part No. ST.0015</li> <li>- 4 ea. Fuse, Part No. E.0046</li> <li>- 1 ea. cable socket for DC supply, Part No. ST.0073</li> <li>- 4 ea. Philips head screw M6x14, Part No. G.0008</li> <li>- 1 ea. ICE power cable, Part No.KA.0171</li> </ul>
ZS 49	0028.3749.00	Accessory set for use with AC and DC powered AVBs, 2 inputs consisting of <ul style="list-style-type: none"> <li>- 2 ea. N male plug, Part No. ST.0015</li> <li>- 4 ea. Fuse, Part No. E.0046</li> <li>- 1 ea. cable socket for DC supply, Part No. ST.0073</li> <li>- 4 ea. Philips head screw M6x14, Part No. G.0008</li> <li>- 1 ea. ICE power cable, Part No.KA.0171</li> </ul>
ZS 39	0028.3739.00	Accessory set for use with AC and DC powered AVBs, 3 inputs consisting of <ul style="list-style-type: none"> <li>- 3 ea. N male plug, Part No. ST.0015</li> <li>- 4 ea. Fuse, Part No. E.0046</li> <li>- 1 ea. cable socket for DC supply, Part No. ST.0073</li> <li>- 4 ea. Philips head screw M6x14, Part No. G.0008</li> <li>- 1 ea. ICE power cable, Part No.KA.0171</li> </ul>
ZS 76	0028.3776.00	Accessory set for use with AC and DC powered AVBs, 4 inputs consisting of <ul style="list-style-type: none"> <li>- 4 ea. N male plug, Part No. ST.0015</li> <li>- 4 ea. Fuse, Part No. E.0046</li> <li>- 1 ea. cable socket for DC supply, Part No. ST.0073</li> <li>- 4 ea. Philips head screw M6x14, Part No. G.0008</li> <li>- 1 ea. ICE power cable, Part No.KA.0171</li> </ul>

## Accessories for AC powered AVBs

Type Designation	Part No.	Description
ZS 29	0028.3729.00	Accessory set for use with AC powered AVBs, 1 input consisting of <ul style="list-style-type: none"> <li>- 1 ea. N male plug, Part No. ST.0015</li> <li>- 2 ea. Fuse, Part No. E.0046</li> <li>- 4 ea. Philips head screw M6x14, Part No. G.0008</li> <li>- 1 ea. ICE power cable, Part No.KA.0171</li> </ul>
ZS 77	0028.3777.00	Accessory set for use with AC powered AVBs, 2 inputs consisting of <ul style="list-style-type: none"> <li>- 2 ea. N male plug, Part No. ST.0015</li> <li>- 2 ea. Fuse, Part No. E.0046</li> <li>- 4 ea. Philips head screw M6x14, Part No. G.0008</li> <li>- 1 ea. ICE power cable, Part No.KA.0171</li> </ul>
ZS 50	0028.3750.00	Accessory set for use with AC powered AVBs, 3 inputs consisting of <ul style="list-style-type: none"> <li>- 3 ea. N male plug, Part No. ST.0015</li> <li>- 2 ea. Fuse, Part No. E.0046</li> <li>- 4 ea. Philips head screw M6x14, Part No. G.0008</li> <li>- 1 ea. ICE power cable, Part No.KA.0171</li> </ul>
ZS 78	0028.3778.00	Accessory set for use with AC powered AVBs, 4 inputs consisting of <ul style="list-style-type: none"> <li>- 4 ea. N male plug, Part No. ST.0015</li> <li>- 2 ea. Fuse, Part No. E.0046</li> <li>- 4 ea. Philips head screw M6x14, Part No. G.0008</li> <li>- 1 ea. ICE power cable, Part No.KA.0171</li> </ul>

## Variants and Order Information AVB 10 B

Below is a selection of typically configured AVB 10 B with BNC outputs.

Type Designation	Part No. NSN	Description
AVB 10 B-4LB-10H-DC-LAN	2066.xxxx.00	4 inputs 10 outputs AC & DC mains power supply LAN remote-control interface
AVB 10 B-3LB-8H-DC	2066.xxxx.00	3 inputs 8 outputs AC & DC mains power supply Serial remote-control interface
AVB 10 B-2LB-10H-LAN	2066.xxxx.00	2 inputs 10 outputs AC mains power supply LAN remote-control interface
AVB 10 B-4LB-10H	2066.xxxx.00	4 inputs 10 outputs AC mains power supply Serial remote-control interface
AVB 10 B-1LB1-3LB-10H-DC-LAN	2066.xxxx.00	4 inputs, input 1 with passive bypass 10 outputs AC & DC mains power supply LAN remote-control interface
AVB 10 B-1LB1-1LB-8H-DC	2066.xxxx.00	2 inputs, input 1 with passive bypass 8 outputs AC & DC mains power supply Serial remote-control interface
AVB 10 B-1LB1-3LB-10H-LAN	2066.xxxx.00	4 inputs, input 1 with passive bypass 10 outputs AC mains power supply LAN remote-control interface
AVB 10 B-1LB1-3LB-10H	2066.xxxx.00	4 inputs, input 1 with passive bypass 10 outputs AC mains power supply Serial remote-control interface

Other AVB 10 B variants are available on request.

The 0.01-30 MHz variants are covered by the AVA series, doc. PIG 020156.

## Variants and Order Information AVB 10 N

Below is a selection of typically configured AVB 10 N with N outputs.

Type Designation	Part No. NSN	Description
AVB 10 N-4LB-6H-DC-LAN	2066.2006.00	4 inputs 6 outputs AC & DC mains power supply LAN remote-control interface
AVB 10 N-3LB-3H-DC	2066.20xx.00	3 inputs 3 outputs AC & DC mains power supply Serial remote-control interface
AVB 10 N-4LB-10H-LAN	2066.20xx.00	4 inputs 10 outputs AC mains power supply LAN remote-control interface
AVB 10 N-2LB-6H	2066.20xx.00	2 inputs 6 outputs AC mains power supply Serial remote-control interface
AVB 10 N-1LB1-3LB-8H-DC-LAN	2066.2007.00	4 inputs, input 1 with passive bypass 8 outputs AC & DC mains power supply LAN remote-control interface
AVB 10 N-1LB1-3LB-7H-DC	2066.20xx.00	4 inputs, input 1 with passive bypass 7 outputs AC & DC mains power supply Serial remote-control interface
AVB 10 N-1LB1-3LB-10H-LAN	2066.20xx.00	4 inputs, input 1 with passive bypass 10 outputs AC mains power supply LAN remote-control interface
AVB 10 N-1LB1-3LB-10H	2066.20xx.00	4 inputs, input 1 with passive bypass 10 outputs AC mains power supply Serial remote-control interface

Other AVB 10 N variants are available on request.

The 0.01-30 MHz variants are covered by the AVA series, doc. PIG 020156.

## Variants and Order Information AVB 20 B

Below is a selection of typically configured AVB 20 B with BNC outputs.

Type Designation	Part No. NSN	Description
AVB 20 B-4KB-20H-DC-LAN	2066.2012.00	4 inputs 20 outputs AC & DC mains power supply LAN remote-control interface
AVB 20 B-4KB-20H-DC	2066.20xx.00	4 inputs 20 outputs AC & DC mains power supply Serial remote-control interface
AVB 20 B-4KB-20H-LAN	2066.20xx.00	4 inputs 20 outputs AC mains power supply LAN remote-control interface
AVB 20 B-4KB-15H	2066.20xx.00	4 inputs 15 outputs AC mains power supply Serial remote-control interface
AVB 20 B-1KB1-3KB-20H-DC-LAN	2066.20xx.00	4 inputs, input 1 with passive bypass 20 outputs AC & DC mains power supply LAN remote-control interface
AVB 20 B-1KB1-3KB-20H-DC	2066.20xx.00	4 inputs, input 1 with passive bypass 20 outputs AC & DC mains power supply Serial remote-control interface
AVB 20 B-1KB1-2KB-16H-LAN	2066.20xx.00	3 inputs, input 1 with passive bypass 16 outputs AC mains power supply LAN remote-control interface
AVB 20 B-1KB1-3KB-15H	2066.20xx.00	4 inputs, input 1 with passive bypass 15 outputs AC mains power supply Serial remote-control interface

Other AVB 20 B variants are available on request.

The 0.01-30 MHz variants are covered by the AVA series, doc. PIG 020156.



## Variants and Order Information AVB 20 N

Below is a selection of typically configured AVB 20 N with N outputs.

Type Designation	Part No. NSN	Description
AVB 20 N-4KB-20H-DC-LAN	2066.20xx.00	4 inputs 20 outputs AC & DC mains power supply LAN remote-control interface
AVB 20 N-4KB-20H-DC	2066.20xx.00	4 inputs 20 outputs AC & DC mains power supply Serial remote-control interface
AVB 20 N-4KB-16H-LAN	2066.20xx.00	4 inputs 16 outputs AC mains power supply LAN remote-control interface
AVB 20 N-4KB-20H	2066.20xx.00	4 inputs 20 outputs AC mains power supply Serial remote-control interface
AVB 20 N-1KB1-3KB-16H-DC-LAN	2066.2018.00	4 inputs, input 1 with passive bypass 16 outputs AC & DC mains power supply LAN remote-control interface
AVB 20 N-1KB1-3KB-20H-DC	2066.20xx.00	4 inputs, input 1 with passive bypass 20 outputs AC & DC mains power supply Serial remote-control interface
AVB 20 N-1KB1-3KB-13H-LAN	2066.20xx.00	4 inputs, input 1 with passive bypass 13 outputs AC mains power supply LAN remote-control interface
AVB 20 N-1KB1-3KB-20H	2066.20xx.00	4 inputs, input 1 with passive bypass 20 outputs AC mains power supply Serial remote-control interface

Other AVB 20 N variants are available on request.

The 0.01-30 MHz variants are covered by the AVA series, doc. PIG 020156.

## AVB 10 Configuration - Type Designation

### AVB 10 X1 – X2 – X3 – X4 – X5

X1 = **Option:** Connectors for receiver connections

B = BNC sockets

N = N sockets

X2 = **Configuration:** Number and type of preamplifiers (inputs)

LB = standard 1.5 – 30 MHz

LB1 = with passive bypass 1.5 – 30 MHz (in case of failure of the supply voltage or is the antenna distributor switched off input 1 is being connected with output 1)

X3 = **Configuration:** Number and type of channel amplifiers (outputs)

H = standard 0.01 – 30 MHz

X4 = **Option:** Power supply

DC = power supply unit with additional input for emergency operation (18 – 36 Vdc ground free)

X5 = **Option:** Interface

LAN = instead of RS232/RS422 Interface an Ethernet-LAN Interface is installed

### Configuration Example 1:

Requested: An antenna distributor with 3 inputs, 6 BNC outputs, supply voltage 230 Vac and RS232 Interface.

### AVB 10 B – 3LB - 6H

### Configuration Example 2:

Requested: An antenna distributor with 4 inputs, 10 N outputs, supply voltage 230 Vac and 18 – 36 Vdc as well as a LAN interface. Input 1 should be equipped with a passive bypass.

### AVB 10 N – 1LB1 – 3LB - 10H – DC - LAN

## AVB 20 Configuration - Type Designation

### AVB 20 X1 – X2 – X3 – X4 – X5

X1 = **Option:** Connectors for receiver connections

B = BNC sockets

N = N sockets

X2 = **Configuration:** Number and type of preamplifiers (inputs)

KB = standard 1.5 – 30 MHz

KB1 = with passive bypass 1.5 – 30 MHz (in case of failure of the supply voltage or is the antenna distributor switched off input 1 is being connected with output 1)

X3 = **Configuration:** Number and type of channel amplifiers (outputs)

H = standard 0.01 – 30 MHz

X4 = **Option:** Power supply

DC = power supply unit with additional input for emergency operation (18 – 36 Vdc ground free)

X5 = **Option:** Interface

LAN = instead of RS232/RS422 Interface an Ethernet-LAN Interface is installed

### Configuration Example 1:

Requested: An equipment with 3 inputs, 16 BNC outputs, supply voltage 230 Vac and RS232 Interface.

### AVB 20 B – 3KB - 16H

### Configuration Example 2:

Requested: An equipment with 4 inputs, 20 N outputs, supply voltage 230 Vac and 18 – 36 Vdc as well as a LAN interface. The input 1 should be equipped with a passive bypass.

### AVB 20 N – 1KB – 3KB - 20H – DC - LAN

## Preamplifiers

The following preamplifiers are for use with the AVB system.

Preampfier AVB 10	Description
Preampfier PA LB	Standard version f=1.5-30 MHz, Vant=39Vdc, 150 mA compatible with PS E, PS E1, PS E2 or PS E3
Preampfier PA LB1	f=1.5-30 MHz, passive bypass function for use with passive antennas only, remote power feeding not supported compatible with PS E, PS E1, PS E2 or PS E3
Preampfier PA LB4	f=1.5-30 MHz, Vant=24Vdc, 500 mA compatible with PS E2 or PS E3
Preampfier PA LB5	f=1.5-30 MHz, Vant=39Vdc, 280 mA for use with active dipole compatible with PS E, PS E1

Preampfier AVB 20	Description
Preampfier PA KB	Standard version f=1.5-30 MHz, Vant=39Vdc, 150 mA compatible with PS E, PS E1, PS E2 or PS E3
Preampfier PA KB1	f=1.5-30 MHz, passive bypass function for use with passive antennas only, remote power feeding not supported compatible with PS E, PS E1, PS E2 or PS E3
Preampfier PA KB4	f=1.5-30 MHz, Vant=24Vdc, 500 mA compatible with PS E2 or PS E3
Preampfier PA KB5	f=1.5-30 MHz, Vant=39Vdc, 280 mA for use with active dipole compatible with PS E, PS E1

## Options

Option	Description
BNC Output Connectors	Receiver connections are BNC sockets
N Output Connectors	Receiver connections are N sockets
Type xxx Output Connectors	Type of output connectors to be specified by customer
AC & DC Mains Power Supply Module PS E	Device equipped with AC and DC mains power supply module PS E with automatic switchover in the event of a power failure, Vant = 39 VDC
AC Mains Power Supply Module PS E1	Device equipped with AC mains power supply module PS E1, Vant = 39 VDC
AC Mains Power Supply Module PS E2	Device equipped with AC mains power supply module PS E2, Vant = 24 VDC
AC & DC Mains Power Supply Module PS E3	Device equipped with AC and DC mains power supply module PS E3 with automatic switchover in the event of a power failure, Vant = 24 VDC
Serial Remote-Control Interface	Device equipped with RS232/RS422 remote control interface
LAN Remote-Control Interface	Device equipped with LAN 10/100 remote control interface
Colour of Front Panel	Colour to be specified by customer RAL number

Other options are available on request.

## Spare Parts AVB

Designation	Type	Part No.	Remark
Channel Amplifier	CA H	0008.7612.80	
Motherboard	MB AVA	0028.2331.80	
Control Unit	CU A	0028.0501.80	
Display Unit	DU B	0008.9822.80	
Network Interface	LAN A	0028.0503.80	10/100 MB
Switch Board	PCB SB B	0008.9841.80	
Power supply	PS E	0008.7410.00	AC & DC mains, Vant=39Vdc
Power supply	PS E1	0008.7411.00	AC mains, Vant=39Vdc
Power supply	PS E2	0008.7412.00	AC mains, Vant=24Vdc for use with max. 2x PA LB4 or 2x PA KB4
Power supply	PS E3	0008.7490.00	AC & DC mains, Vant=24Vdc for use with max. 2x PA LB4 or 2x PA KB4
Fuse	5,0 AT/250V	E.0046	

## Spare Parts AVB 10 specific

Designation	Type	Part No.	Remark
Preamplifier	PA LB	2066.2001.00	Vant=39Vdc, 150 mA
Preamplifier	PA LB1	2066.2002.00	passive bypass for input 1
Preamplifier	PA LB4	2066.2014.00	Vant=24Vdc, 500 mA
Preamplifier	PA LB5	2066.2015.00	Vant=39Vdc, 280 mA

## Spare Parts AVB 20 specific

Designation	Type	Part No.	Remark
Preamplifier	PA KB	2066.2003.00	Vant=39Vdc, 150 mA
Preamplifier	PA KB1	2066.2004.00	passive bypass for input 1
Preamplifier	PA KB4	2066.2016.00	Vant=24Vdc, 500 mA
Preamplifier	PA KB5	2066.2017.00	Vant=39Vdc, 280 mA
Extension Board	EB AVA	0028.2334.80	

## Compatible Active Antenna Products

The following active receiving antennas match ideally to feed the distributors of the AVB series.

Type Designation	Part No. NSN	Description
STA 10 A/D/1.6-30	0005.8971.00	Active Receiving Antenna 1.6-30 MHz Doc. FIG 010108
HD 1 A	0005.6610.00	Active Receiving Dipole 1.5-30 MHz Doc. FIG 010202
HD 2 A	0005.6620.00	Active Receiving Dipole 1.5-30 MHz Doc. FIG 010203
HD 2 A + STA 10 A/D/1.6-30	2071.2001.00	Active Receiving Combination Antenna System 1.6-30 MHz Doc. FIG 010307