

NEUMANN
NEUMANN[®]



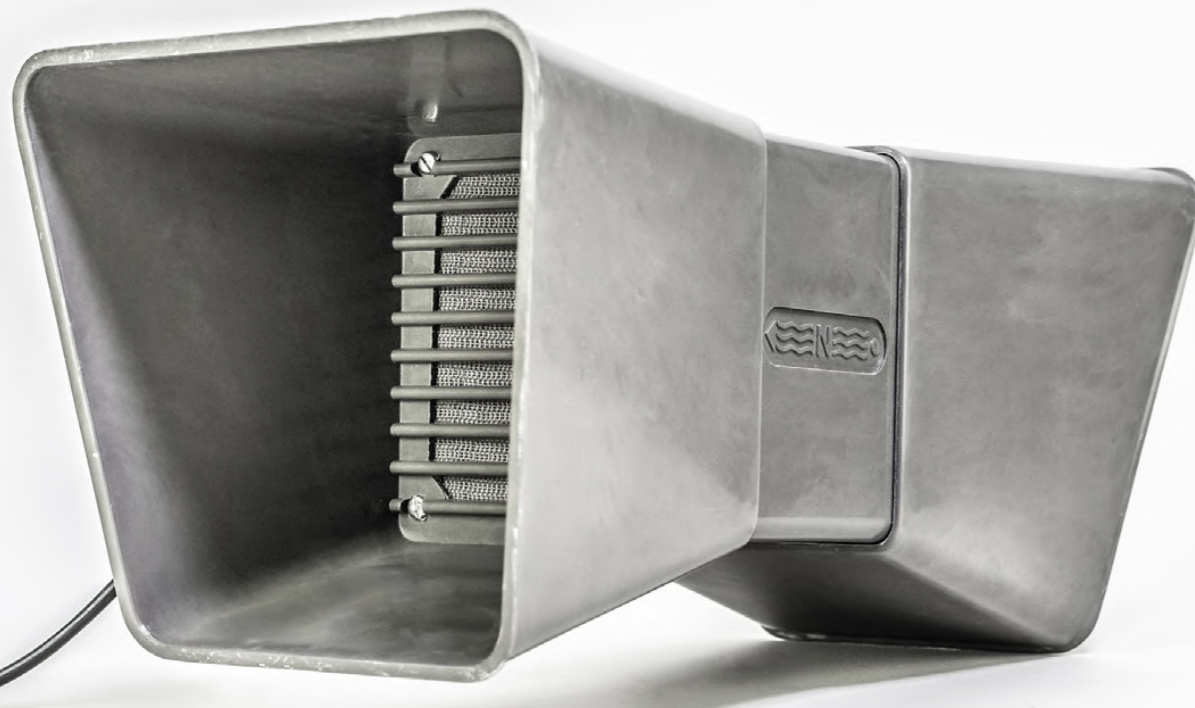
Loudspeakers 2021



**Railway platform
loudspeakers**

Railway station loudspeakers

Diffuser 6W / 100V,
weatherproof, IP54, polyester



- Bell and centre section made of flame-retardant, glass-fibre reinforced polyester (colour- and light-resistant)
- Good speech reproduction, high syllable intelligibility
- Pole and wall mounting, attachment to suspension cables

Diffuse radiators can be used in closed rooms and outdoors. They are particularly suitable for sound reinforcement in acoustically difficult rooms and with changing interference levels.

Announcements with a high level of syllable intelligibility can be achieved with diffuse emitters, both in underground systems and on platforms of local and long-distance public transport, as well as when used in large-area systems such as track fields, squares or factory premises.

Art.-No.	4 805 7	4 806 8
Mechanical data		
Number of funnels	2	1
Weight	Approx. 2.1kg	Approx. 1.6kg
Dimensions (LxWxD)	405mm x 192mm x 170mm	260mm x 192mm x 170mm
Housing colour	Iron grey (RAL 7011)	
Material	Flame-retardant, glass-fibre reinforced polyester	
Electrical data		
Nominal power	6W	
Transformer adjustment (100V)	6; 3; 1.5W	
Impedance	1.66; 3.33; 6.66kΩ	
Transmission range (-10dB)	250Hz ... 10kHz	
Mean sound pressure (1W / 1m)	96dB	98dB
Max. sound pressure (Pmax / 1m)	102dB	103dB
Environmental conditions		
Environmental temperature range	-25°C ... +70°C	
Protection class acc. to DIN EN60529	IP54	
Burning behaviour of the housing	UL94 V-0	

 4 806 8

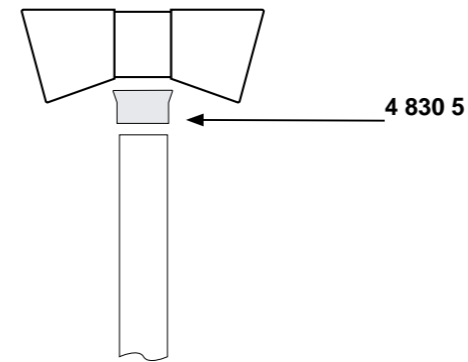
 4 805 7

Railway station loudspeakers

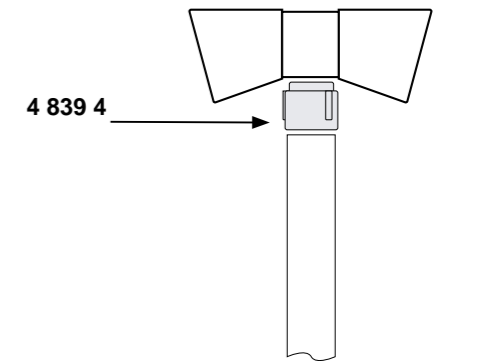
Diffuser accessories

Article	Description	Art.-No.
Standpipe and wall mounting, mast holder		
Light metal flange	Aluminium alloy, for standpipes up to max. Ø 40mm, approx. 0.2kg	4 830 5
Light metal flange	Aluminium alloy, for standpipes up to max. Ø 70mm, approx. 0.25kg	4 839 4
Aluminium clamp	For mounting on poles from Ø 70mm, approx. 0.4kg	4 822 6
Light metal flange	With pipe thread R3/4", for speaker mounting, approx. 0.15kg	4 829 3
Mounting bracket	Made of cast aluminium, for wall mounting, adjustable	4 851 8
Ceiling / support cable and wide flange beam attachment		
Hanging nipple	For ceiling mounting, approx. 0.32kg	4 818 1
Suspension nipple / support rope	For pipe pendulum R3/4", with 2 gland entries, approx. 0.5kg	4 819 2
Suspension nipple / support rope	As before, movable attachment, incl. 2 stuffing boxes	4 848 4
Rope clamp	For pendulum tube attachment to suspension ropes, up to 6.5mm rope thickness	4 849 5
Pipe pendulum	Aluminium, thread R3/4", length 95mm, approx. 0.09kg	4 800 2
Pipe pendulum	As before, but length 1m, approx. 0.9kg	4 823 7
Pipe pendulum	As before, but length 2m, approx. 1.8kg	4 824 8
Pipe pendulum	As before, but length 5m, approx. 4.5kg	4 825 9
Retaining set	For fixing to wide flange beams up to 250mm, incl. clamps, hook bolt and end sleeve, with gland, approx. 1.7kg	4 821 5

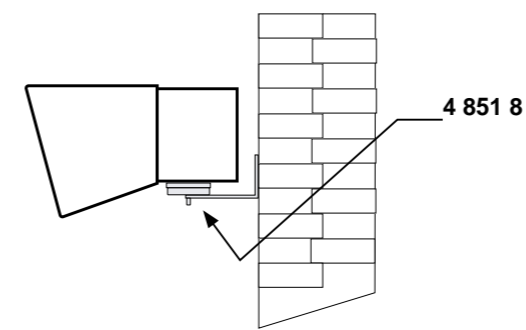
Mounting options for diffuser (single and double funnels)



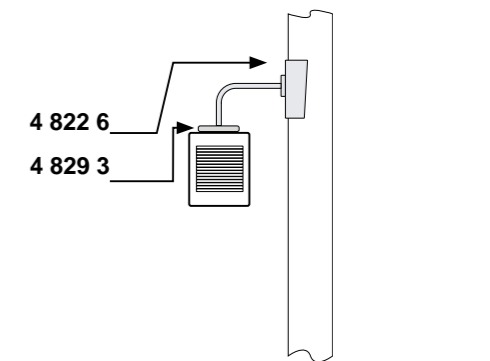
Standpipe attachment to pipe up to Ø 40mm



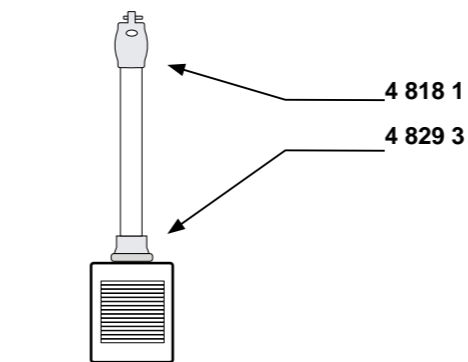
Standpipe attachment to pipe up to Ø 70mm



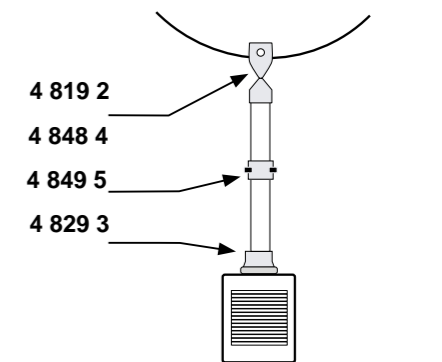
Wall mounting



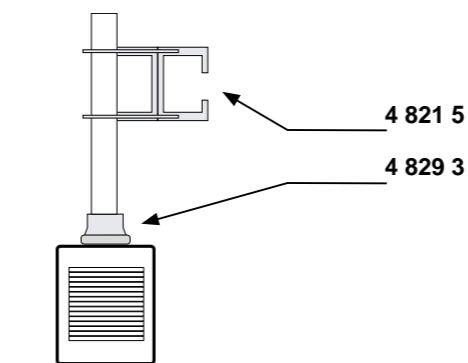
Pole mount on tube from Ø 70mm



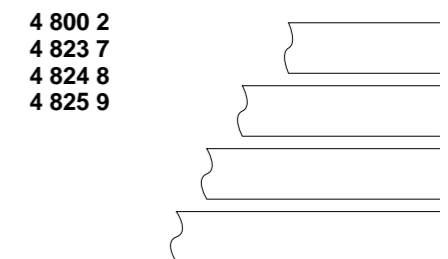
Ceiling mounting



Pipe pendulum mounting



Wide flange beam mounting





 4 783 2

 4 782 1

Railway station loudspeakers

Sound projector 6W / 100V,
weatherproof, IP53, EN 54-24, aluminium

certified
EN 54-24

- Robust and vandal-proof aluminium housing
- Pivot and tilt bracket for wall and ceiling mounting
- Good speech reproduction, high syllable intelligibility
- Mast and wall mounting, attachment to suspension cables
- Certified according to EN 54-24

The sound projector is a robust indoor and outdoor loudspeaker in aluminium design. The loudspeaker is equipped with a swivel-tilt bracket and is suitable for mounting on walls and ceilings.

The 130mm chassis is characterised by a high sound pressure and a very good transmission range. The sound projector is particularly suitable for use in passenger information systems of local and long-distance public transport, as well as in public address systems, alarm systems and evacuation systems. In addition, it is approved for use in fire alarm systems according to EN 54.

1.5m connection cable and fixing material are included in the scope of delivery.

Art.-No.	4 782 1
Mechanical data	
Weight	Approx. 2.6kg
Dimensions	Ø 144 x 210mm
Housing colour	Pure white (RAL 9010)
Material	Aluminium
Connection cable	4-wire cable, length 1.5m
Electrical data	
Nominal power	6W / 100V
Transformer adjustment (100V)	6; 3; 1.5W
Impedance	1.66; 3.33; 6.66kΩ
Transmission range (-10dB)	80Hz ... 20kHz
Mean sound pressure (1W / 1m)	93dB
Max. sound pressure (Pmax / 1m)	101dB
Sound pressure EN (1W / 4m)	77dB
Max. sound pressure EN (4m)	86dB
Beam angle 500 / 1000 / 2000 / 4000 Hz	180° / 152° / 116° / 56°
Environmental conditions	
Environmental temperature range	-40°C ... +70°C
Protection class acc. to DIN EN60529	IP53
Certified according to	EN 54-24

Railway station loudspeakers

Sound projector 2x 6W / 100V,
weatherproof, A/B, IP53, EN 54-24, aluminium

certified
EN 54-24

- Robust and vandal-proof aluminium housing
- Pivot and tilt bracket for wall and ceiling mounting
- Double voice coil
- Certified according to EN 54-24

The Sound projector in A/B technology with double voice coil is a robust indoor and outdoor loudspeaker in aluminium design. The loudspeaker is equipped with a swivel-tilt bracket and is suitable for mounting on walls and ceilings.

The 130mm chassis is characterised by a high sound pressure and a very good transmission range. The Sound projector is particularly suitable for use in passenger information systems of public transport, as well as in public address systems, alarm systems and evacuation systems. In addition, it is approved for use in fire alarm systems according to EN 54.

1.5m connection cable and mounting material are included in the delivery.

Art.-No.	4 783 2
Mechanical data	
Weight	Approx. 2.9kg
Dimensions	Ø 144mm x 210mm
Housing colour	Pure white (RAL 9010)
Material	Aluminium
Connection cable	4-wire cable, length 1.5m
Electrical data	
Nominal power	2x 6W / 100V
Transformer adjustment (100V)	2x 6; 3; 1.5W
Impedance	2x 1.66; 3.33; 6.66kΩ
Transmission range (-10dB)	80Hz ... 20kHz
Mean sound pressure (1W / 1m)	93dB
Max. sound pressure (Pmax / 1m)	101dB
Sound pressure EN (1W / 4m)	77dB
Max. sound pressure EN (4m)	86dB
Beam angle 500 / 1000 / 2000 / 4000Hz	180° / 152° / 116° / 56°
Environmental conditions	
Environmental temperature range	-40°C ... +70°C
Protection class acc. to DIN EN60529	IP53
Certified according to	EN 54-24

Railway station loudspeakers

Sound projector 2x 6W / 100V,
weatherproof, dipol, IP53, aluminium



- Robust and vandal-proof aluminium housing
- Holding plate mounting

The Sound projector in dipole technology is a robust indoor and outdoor loudspeaker in aluminium design.

The loudspeaker is equipped with a mounting plate and is suitable for mounting on walls and ceilings. The 130mm chassis is characterised by a high sound pressure and a very good transmission range. The Sound projector is particularly suitable for use in passenger information systems, as well as in public address systems for local and long-distance public transport.

1.5m connection cable and fixing material are included in the scope of delivery.

Art.-No.	4 784 3
Mechanical data	
Weight	Approx. 2.9kg
Dimensions	Ø 144mm x 210mm
Housing colour	Pure white (RAL 9010)
Material	Aluminium
Connection cable	4-wire cable, length 1.5m
Electrical data	
Nominal power	2x 6W / 100V
Transformer adjustment (100V)	12; 6; 3W
Impedance	2x 0.83; 1.66; 3.33kΩ
Transmission range (-10dB)	70Hz ... 19kHz
Mean sound pressure (1W / 1m)	93dB each side
Max. sound pressure (Pmax / 1m)	101dB each side
Beam angle	160°
Environmental conditions	
Environmental temperature range	-40°C ... +70°C
Protection class acc. to DIN EN60529	IP53

Railway station loudspeakers

Sound projector 10W / 100V,
weatherproof, dipol, IP55, aluminium

- Robust and vandal-proof aluminium housing
- Pole, wall or ceiling mounting

The Sound projector in dipole technology is a robust indoor and outdoor loudspeaker in aluminium design.

The loudspeaker is suitable for mounting on a pole or on a wall or ceiling. The chassis is characterised by a high sound pressure and a very good transmission range.

The Sound projector is particularly suitable for use in passenger information systems and in public address systems for local and long-distance public transport.

Art.-No.	4 786 5	4 787 6
Mechanical data		
Mounting	Pole mounting	Wall / ceiling mounting
Weight	Approx. 3.2kg	
Dimensions	Ø 144mm x 260mm	
Housing colour	White aluminium (RAL 9006)	
Material	Aluminium	
Connection	5-wire cable, length 1.5m	
Electrical data		
Nominal power	10W /100V	
Transformer adjustment (100V)	10; 5; 2.5; 1.25W	
Impedance	1; 2; 4; 8kΩ	
Transmission range (-10 dB)	200Hz ... 19kHz	
Mean sound pressure (1W / 1m)	94dB each side	
Max. sound pressure (Pmax / 1m)	104dB each side	
Beam angle	140°	
Environmental conditions		
Environmental temperature range	-40°C ... +70°C	
Protection class acc. to DIN EN60529	IP55	

 4 786 5

 4 787 6



Railway station loudspeakers

Loudspeaker 6W / 100V,
IP53, Fischer® built-in light systems, plastic



- Plastic housing
- For 100V sound systems
- Suitable for Fischer built-in light systems

The built-in Loudspeaker is designed to be built into round platform luminaries (Fischer system).

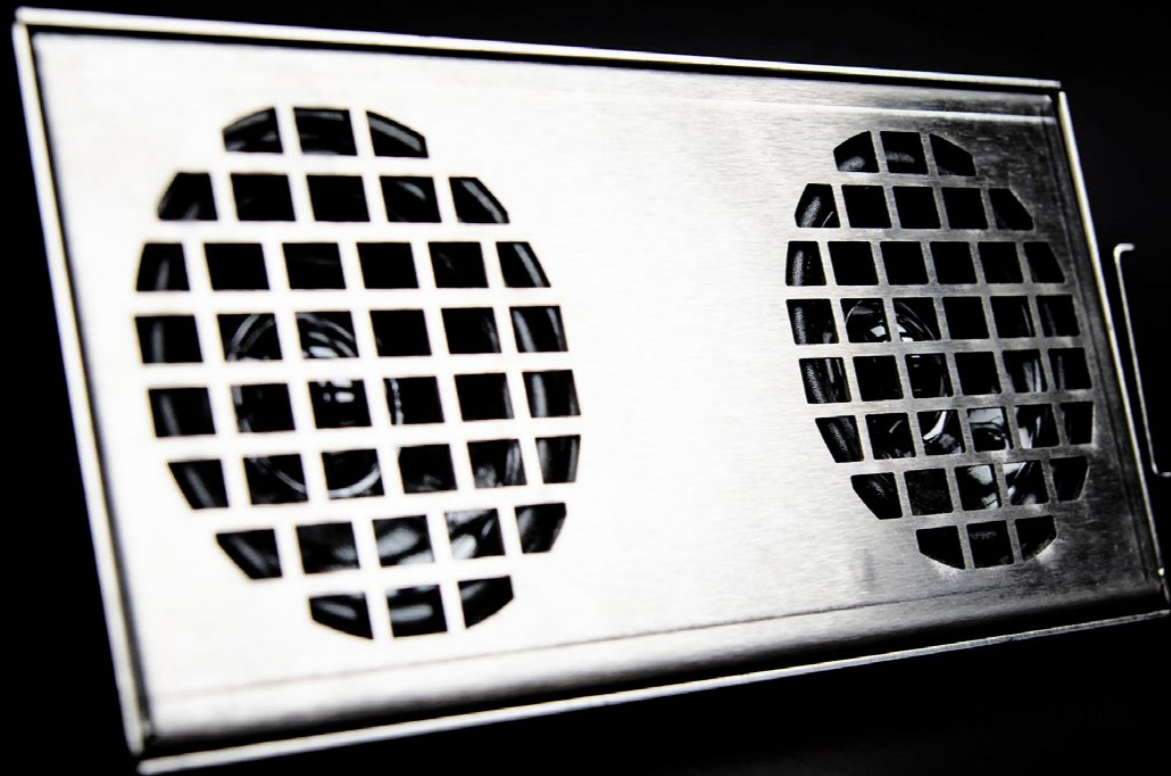
The black plastic housing is closed and the grey front cover serves as protection against moisture.

Art.-No.	4 930 6
Mechanical data	
Weight	Approx. 0.75kg
Dimensions (WxHxD)	160mm x 90mm x 92mm
Housing colour	Deep black (RAL 9005)
Material	ABS plastic
Connection cable	4-wire cable, length 0.5m
Electrical data	
Nominal power	6W / 100V
Transformer adjustment (100 V)	6; 3; 1.5W
Impedance	1.66; 3.33 6.66kΩ
Transmission range (-10 dB)	150Hz ... 15kHz
Mean sound pressure (1W / 1m)	92dB
Max. sound pressure (Pmax / 1m)	99dB
Beam angle	180°
Environmental conditions	
Environmental temperature range	-40°C ... +70°C
Protection class acc. to DIN EN60529	IP53

Fischer® is a registered trademark

Railway station loudspeakers

Loudspeaker 10; 15W / 100V,
IP53, built-in, light strip, V2A



- Stainless steel housing V2A
- For 100V public address systems
- Suitable for strip light systems

The Built-in-Loudspeaker is intended for use in light bands on platforms of public transport, as well as in subways and underground stations.

The stainless steel housing provides protection against moisture. The loudspeaker has the best speech characteristics.

Art.-No.	4 931 7	4 932 8
Mechanical data		
Weight	Approx. 1.5kg	Approx. 1.7kg
Dimensions (WxHxD)	205mm x 91mm x 61mm	
Housing colour	V2A Stainless steel surface	
Connection cable	4-wire cable, length 1.5m	
Electrical data		
Nominal power	10W / 100V	15W / 100V
Transformer adjustment (100V)	10; 5; 2.5W	15; 7.5; 3.75W
Impedance	1; 2; 4kΩ	0.66; 1.33; 2.66kΩ
Transmission range (-10dB)	180Hz ... 22kHz	
Mean sound pressure (1W / 1m)	94dB	94dB
Max. sound pressure (Pmax / 1m)	101dB	103dB
Beam angle	160°	160°
Environmental conditions		
Environmental temperature range	-40°C ... +90°C	
Protection class acc. to DIN EN60529	IP53	

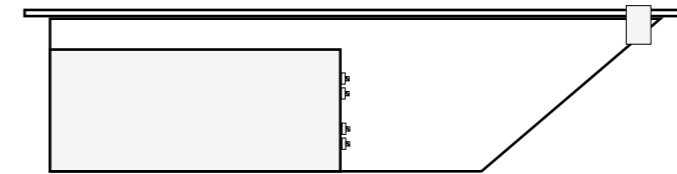
 4 931 7

 4 932 8



Railway station loudspeakers

Loudspeaker 10W / 100V,
weatherproof, IP65, underfloor, V4A



Assembly diagram



Loudspeaker enclosure



Built-in tray

- Weatherproof, rustproof V4A stainless steel housing (IP65), step-resistant
- Horn loudspeaker with good speech reproduction and high syllable intelligibility
- Enclosure cover can be swivelled 180°, incl. turnbuckle with double-bit operation
- Two-layer loudspeaker fabric made of Saran® and double expanded metal grille
- 2x mounting holes Ø 21mm for cable glands¹⁾ Pg13.5
- Mounting possibility of the built-ins with 6x M6 cylinder screws¹⁾

This weatherproof, rustproof V4A stainless steel loudspeaker is optimally protected against weather influences due to its robust construction and its splash-proof loudspeaker cover.

The loudspeaker was specially developed for underfloor built-in on vehicle travel trains. A lockable stainless steel built-in tray serves as a sound conducting element and forms a functional unit together with the built-in stainless steel loudspeaker housing.

Art.-No.	4 750 6
Mechanical data	
Weight	Approx. 9.5kg
Dimensions (WxHxD)	118mm x 220mm x 500mm
Material	V4A Stainless steel (1.4571)
Electrical data	
Nominal power	10W / 100V
Transformer adjustment (100V)	10; 6; 3W
Impedance	1; 1.66; 3.33kΩ
Transmission range (-10db)	300Hz ... 5kHz
Mean sound pressure (1W / 1m)	94dB
Max. sound pressure (Pmax / 1m)	102dB
Environmental conditions	
Environmental temperature range	-25°C ... +70° C
Protection class acc. to DIN EN60529	IP65

¹⁾ Not included in the scope of delivery.

In use by Deutsche Bahn, Sylt

Railway station loudspeakers

Cardioid clay columns

160 / 180 / 240W, IP42, extruded aluminium

- Cardioid technology
- Tweeter protection, electronically self-resetting
- 3-way system
- Extruded aluminium profile
- RAL 9010 powder-coated
- Mounting points in base and lid

These sound columns in elegant, novel design are mainly suitable for speech and music transmissions in churches, foyers, modern offices, etc.

They have a very good vertical bundling and a wide horizontal radiation. By means of appropriate crossovers, the reproduction spectrum is adapted to the line length and a frequency-constant vertical beam angle is achieved.

By means of the new cardioid technology, a pronounced rear and side attenuation is already achieved at medium and low frequencies.


The excellent transmission quality for speech and music The excellent transmission quality for speech and music is achieved over long distances and is also excellent in acoustically problematic rooms such as churches or halls.

Art.-No.	4 912 6	4 913 7	4 914 8
Mechanical data			
Weight	Approx. 9.4kg	Approx. 12.5kg	Approx. 14.5kg
Dimensions (WxHxD)	125mm x 1070mm x 115mm	125mm x 1300mm x 115mm	125mm x 1900mm x 115mm
Housing colour	Pure white powder coated (RAL 9010)		
Material	Extruded aluminium		
Ports	Phoenix (1-/2+) and SPEAKON (1+/1-)		
Electrical data			
Nominal power	180W	160W	240W
Programme loadability	360W	320W	480W
Impedance	8Ω		
Transmission range (-10 dB)	200Hz ... 20kHz	190Hz ... 20kHz	190Hz ... 20kHz
Mean sound pressure (1W / 1m)	94dB	99dB	100dB
Max. sound pressure (Pmax / 1m)	119dB	124dB	126dB
Beam angle	160° horizontal 30° vertical Cardioid-Hypercardioid	140° horizontal 30° vertical Cardioid-Hypercardioid	90° horizontal 25° vertical Cardioid-Hypercardioid
Environmental conditions			
Environmental temperature range	-0°C ... +50°C		
Protection class acc. to DIN EN 60529	IP42		



**Horn
loudspeakers**



 **4 803 5**

 **4 902 5**

Horn loudspeakers

Horn loudspeaker 25W / 100V, weatherproof, IP65, plastic

- Dust- and waterproof, glass-fibre reinforced plastic housing
- Weatherproof and heat-resistant
- High efficiency, good directivity
- Incl. U-shaped, stainless steel bracket, swivelling

Horn loudspeakers are designed for use in harsh environments. They are preferably used as loudspeakers for long ranges, predominantly in wide-area installations as well as in environments with high interference levels.

They are characterised by high efficiency, excellent speech reproduction and good directivity.

Art.-No.	4 803 5
Mechanical data	
Weight	Approx. 3.1kg
Dimensions (DxL)	Ø 235mm x 345mm
Housing colour	Silver-grey (similar to RAL 9006)
Material	Glass-fibre reinforced plastic
Connection	Ceramic clamps
Electrical data	
Nominal power	25W
Transformer adjustment (100V)	25; 12; 8; 6; 3; 1W
Impedance	0.4; 0.83; 1.25; 1.66; 3.33; 10kΩ
Transmission range	300Hz ... 7kHz
Mean sound pressure (1W / 1m)	108dB
Max. sound pressure (Pmax / 1m)	121dB
Environmental conditions	
Environmental temperature range	-25°C ... +70°C
Protection class acc. to DIN EN60529	IP65
Compliance with Dutch and British regulations according to	NEN2575 and BS5839

1) For assembly we recommend the use of the hook spanner art.-no. 97 9 4410 001 5.

Horn loudspeakers

Horn loudspeaker 30W / 8Ω, weatherproof, IP65, plastic

- Dust- and waterproof, glass-fibre reinforced plastic housing
- Weatherproof and heat-resistant
- High efficiency, good directivity
- Incl. U-shaped, stainless steel bracket, swivelling

Horn loudspeakers are designed for use in harsh environments. They are preferably used as loudspeakers for long ranges, predominantly in wide-area installations as well as in environments with high interference levels.

They are characterised by high efficiency, excellent speech reproduction and good directivity.

Art.-No.	4 902 5
Mechanical data	
Weight	Approx. 2.5kg
Dimensions (DxL)	Ø 235mm x 345mm
Housing colour	Silver grey (similar to RAL 9006)
Material	Glass-fibre reinforced plastic
Connection	Ceramic clamps
Electrical data	
Nominal power	30W
Impedance	8Ω
Transmission range	300Hz ... 7kHz
Mean sound pressure (1W / 1m)	108dB
Max. sound pressure (Pmax / 1m)	122dB
Environmental conditions	
Environmental temperature range	-25°C ... +70°C
Protection class acc. to DIN EN60529	IP65

1) For assembly we recommend the use of the hook spanner art.-no. 97 9 4410 001 5.

Horn loudspeakers

certified
EN 54-24

Horn loudspeaker

10W ... 30W / 100V, weatherproof, IP66,
EN 54-24, plastic

- Self-extinguishing weatherproof ABS plastic housing
- Matching transformer for 100V technology with power adjustment
- Integrated high-pass filter
- Suitable for wall and ceiling mounting
- V2A swivel-tilt mounting bracket
- Resistant to exhaust fumes, deicing salts and road dust
- Certified according to EN 54-24 / BS5839

The weatherproof Horn loudspeaker models for use in communication, public address or evacuation systems with 100V technology are ideally suited for speech transmission and voice alerting, even in acoustically difficult environments, due to their outstanding speech intelligibility.

They are suitable for indoor use as well as for outdoor applications. In addition, it is approved for use in fire alarm systems according to EN 54. The grey plastic housing is made of self-extinguishing PC/ABS and is therefore resistant to environmental influences. Due to the material used, the Horn loudspeakers can withstand extreme temperatures and are equipped with a stainless steel swivel-tilt mounting bracket for flexible wall and ceiling mounting.

For cable entry, the Horn loudspeakers each have two M20 cable glands. The connection cables are connected to a 4-pole terminal inside. Delivery includes matching transformer, mounting material and a tuned high-pass filter.

Art.-No.	4 920 5	4 921 6	4 922 7	4 923 8	4 924 9
Mechanical data					
Weight	Approx. 1.8kg	Approx. 2.0kg	Approx. 2.1kg	Approx. 2.2kg	Approx. 2.3kg
Dimensions (WxHxD)	180mm x 120mm x 230mm				
Housing colour	Light grey (RAL 7035)				
Material	PC/ABS self-extinguishing				
Connection	4-pole clamp				
Cable entry	2x M20 Cable glands				
Pan-tilt mounting bracket	V2A Stainless steel				
Electrical data					
Nominal power	10W / 100V	15W / 100V	20W / 100V	25W / 100V	30W / 100V
Transformer adjustment (100V)	10; 5; 2.5W	15; 7.5; 3.75W	20; 10; 5W	25; 12.5; 6.25W	30; 15; 7.5W
Impedance	1; 2; 4kΩ	6.66; 1.33; 2.66kΩ	0.5; 1; 2kΩ	0.4; 0.8; 1.6kΩ	0.33; 0.66; 1.33kΩ
Transmission range (-10dB)	350Hz ... 10kHz				
Beam angle	110° / 55°				
Mean sound pressure (1W / 1m)	110dB				
Max. sound pressure (Pmax / 1m)	119dB	120dB	121dB	122dB	123dB
Environmental conditions					
Environmental temperature range	-40° ... +90°C				
Protection class acc. to DIN EN60529	IP66				
Certified according to	EN 54-24 / BS5839				





Horn loudspeakers

Tunnel horn

50W; 100W / 100V, weatherproof, IP65, GRP



- Matching transformer for 100V technology with power matching
- Suitable for wall and ceiling mounting
- Corrosion-resistant stainless steel mounting brackets
- Resistant to exhaust gases, de-icing salts and road dust
- Simulation data available for Ease and Ulysses
- Fine grind in V4A Stainless steel 1.4571 against animals & dust

The weatherproof and low-distortion Horn loudspeaker for use in tunnels or pre-portal sound reinforcement with 100V technology is excellently suited for speech transmission and voice alerting in this acoustically difficult environment due to its outstanding speech intelligibility.

It is suitable for use in the tunnel itself (boundary layer/half sphere) as well as for use in the pre-portal area (full sphere).

Art.-No.	4 764 1	4 765 2
Mechanical data		
Weight	Approx. 21kg	
Dimensions (WxDxL)	770mm x 325mm x 1650mm	
Housing colour	Grey	
Material	GRP 056 / RM113	
Connection	Cable, length 1.5m	
Mounting bracket	V4A Stainless steel	
Electrical data		
Nominal power	50W / 100V	100W / 100V
Transformer adjustment (100V)	50W / 37.5W / 25W / 12.5W	100W / 50W / 25W
Impedance	0.2; 0.26; 0.4; 0.8kΩ	0.1; 0.2; 0.4kΩ
Transmission range (+3 / -10dB)	250Hz ... 10kHz	
Horizontal opening angle	500Hz Octave band 45° 1kHz Octave band 23° 2kHz Octave band 22°	
Max. sound pressure (Pmax / 1m)	141dB	
Sensitivity	500Hz Octave band 121dB SPL at 1W / 1m 1kHz Octave band 126dB SPL at 1W / 1m 2kHz Octave band 128dB SPL at 1W / 1m	
Reverse damping	500Hz Octave band 20dB 1kHz Octave band 26dB 2kHz Octave band 34dB	
Environmental conditions		
Environmental temperature range	-40° ... +90°C	
Protection class acc. to DIN EN60529	IP65	

 **4 764 1**
 **4 765 2**



Horn loudspeakers

Horn loudspeaker 7W / 8Ω,
weatherproof, IP54, plastic



- Dimensionally stable plastic housing
- U-shaped metal bracket
- Horn loudspeaker
- C64 cable, approx. 2.0m length

The dynamic Horn loudspeaker is suitable for use in radio and ELA systems in stationary and mobile applications.

Art.-No.	4 844 0
Mechanical data	
Weight	Approx. 0.75kg
Dimensions (DxL)	Ø 115mm x 78mm (without mounting bracket)
Housing colour	Black
Material	Dimensionally stable plastic housing
Connection	C64 cable, approx. 2.0m length
Mounting bracket	U-shaped metal bracket
Electrical data	
Nominal power	7W
Transmission range	700Hz - 13kHz
Impedance	8Ω
Sound pressure (1W / 1m)	100dB
Environmental conditions	
Environmental temperature range	-25°C - +85°C
Permissible relative humidity	≤ 75%
Protection class acc. to DIN EN60529	IP54

Horn loudspeakers

Horn loudspeaker 10W / 4Ω, weatherproof, IP69K, plastic



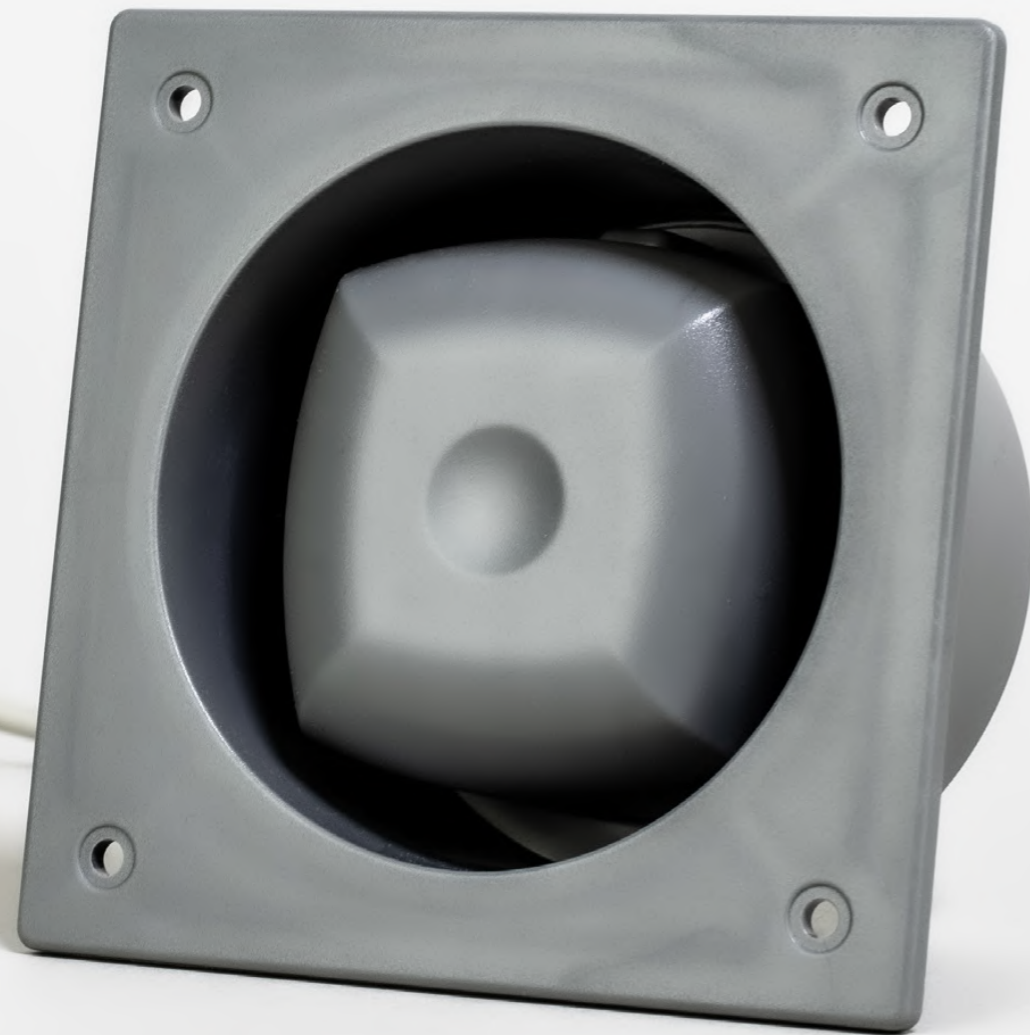
- Plastic housing
- With mounting bracket for quick fixing
- Wide temperature range
- IP69K certified

This Horn loudspeaker is specially designed for speech transmission. It is characterised by its high sound pressure, compact design and wide temperature range, making it ideal for use in trains and vehicles.

Art.-No.	4 892 3
Mechanical data	
Weight	Approx. 0.5kg
Dimensions (DxL)	Ø 97mm x 102mm
Housing colour	Light grey (RAL 7035)
Material	PC/ABS UL 94 V0
Connection cable	2-wire cable, length 0.6m
Electrical data	
Nominal power	10W
Impedance	4Ω
Transmission range (-10dB)	250Hz ... 20kHz
Mean sound pressure (1W / 1m)	100dB
Max. sound pressure (Pmax / 1m)	109dB
Beam angle	150°
Environmental conditions	
Environmental temperature range	-40°C ... +110°C
Protection class acc. to DIN EN60529	IP69K

Horn loudspeakers

Horn loudspeaker 10W / 4Ω, weatherproof, IP55, built-in, plastic



- Plastic housing
- With mounting bracket for quick attachment
- Wide temperature range

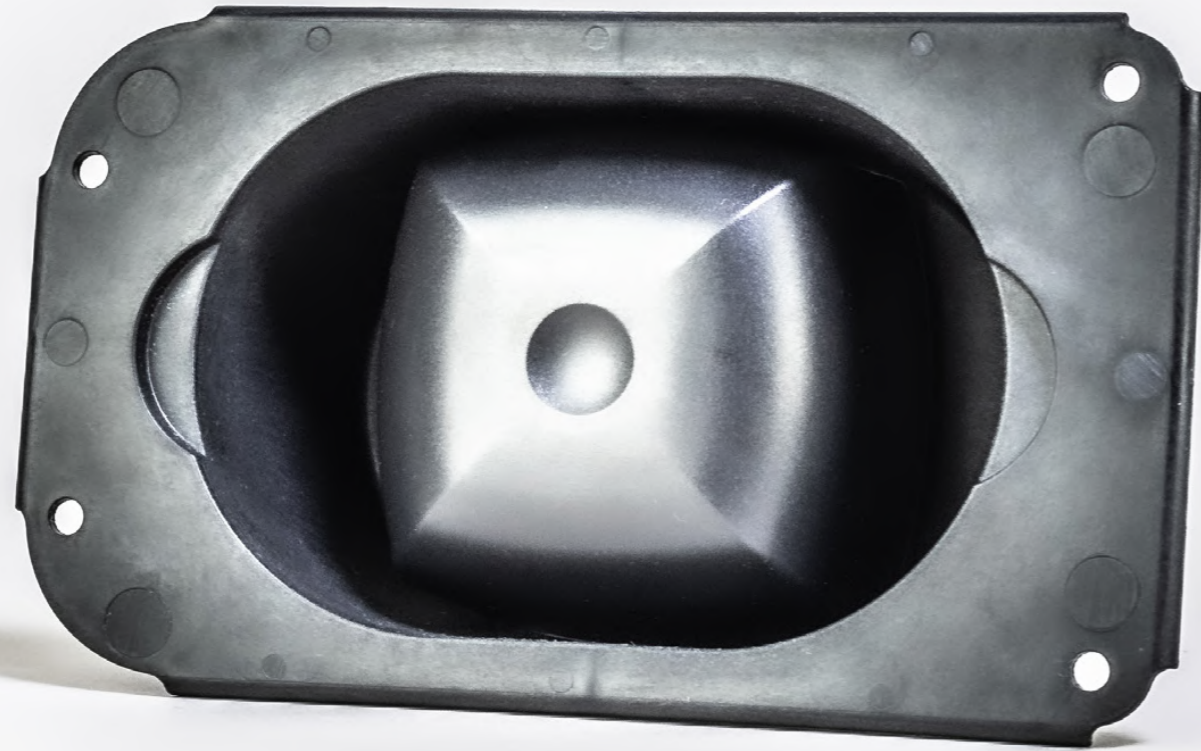
This Horn loudspeaker build-in loudspeaker is specially designed for speech transmission.

It is characterised by its high sound pressure, compact design and wide temperature range, making it ideal for use in emergency call devices, trains and vehicles.

Art.-No.	4 891 2
Mechanical data	
Weight	Approx. 1.0kg
Dimensions (WxHxD)	121mm x 121mm x 95mm
Installation diameter	Ø 101mm
Housing colour	Dusty grey (RAL 7037)
Material	Plastic
Connection cable	2-wire cable, length 2.0m
Electrical data	
Nominal power	10W
Impedance	4Ω
Transmission range (-10dB)	300Hz ... 20kHz
Mean sound pressure (1W / 1m)	98dB
Max. sound pressure (Pmax / 1m)	107dB
Beam angle	160° / 70°
Environmental conditions	
Environmental temperature range	-40°C ... +70°C
Protection class acc. to DIN EN60529	IP55

Horn loudspeakers

Horn loudspeaker 5W / 8Ω,
weatherproof, IP55, built-in, plastic





- Plastic (Pocan) housing
- Easy mounting
- Reinforced mounting surface

The Horn loudspeaker recessed loudspeaker with wideband system is designed for installation in microphone units and behind mounting walls.

Its high efficiency makes it ideal for speech and signal output.

Art.-No.	4 898 9	4 897 8
Mechanical data		
Version	Not vapourised	Metallically vapourised
Weight	Approx. 0.42kg	
Dimensions (WxHxD)	161mm x 95mm x 55mm	
Housing colour	Black	
Material	Pocan	
Connection cable	2-wire cable, length 0.1m	
Electrical data		
Nominal power	5W	
Music performance	10W	
Impedance	8Ω	
Transmission range (-10 dB)	280Hz ... 16kHz	
Mean sound pressure (1W / 1m)	98dB	
Max. sound pressure (Pmax / 1m)	104dB	
Environmental conditions		
Environmental temperature range	-40°C ... +70°C	
Protection class acc. to DIN EN 60529	IP55	

 4 898 9

 4 897 8



**Explosion-proof
loudspeakers**

Explosion-proof loudspeakers


Wall and ceiling loudspeakers 6W / 100V,
ex-proof, IP65, built-in, aluminium




- Explosion-proof, earthed aluminium built-in enclosure
- Suitable for use in Ex zones 1, 2, 21 and 22
- Fixing of the metal cover by means of screw connections
- Approved cable entry (M20 EExe ATEX)


The explosion-proof wall- and ceiling-mounted built-in loudspeaker has been designed for use in hazardous areas of zones 1, 2, 21, 22 and in all temperature classes (environments with gases and vapours with an ignition temperature $>85^{\circ}\text{C}$ and $\leq 100^{\circ}\text{C}$). It consists of an encapsulated aluminium housing with a white painted metal cover, which is fixed to the housing with three cover screws.

Only certified cable entries and dummy plugs may be used for mounting. The loudspeaker must also be earthed at the specially marked screws.

Art.-No.	4 953 1
Mechanical data	
Weight	Approx. 4.0kg
Dimensions (DxL)	\varnothing 200mm x 172mm
Ceiling cut-out	\varnothing 153mm
Housing colour	Pure white (RAL 9010)
Material	Aluminium
Electrical data	
Nominal power	6W
Transformer adjustment (100V)	6; 3; 1.5; 1; 0.5; 0.4W
Impedance	1.66; 3.33; 6.66; 10; 20; 25k Ω
Transmission range (-10db)	160Hz ... 20kHz
Mean sound pressure (1W / 1m)	90dB
Max. sound pressure (Pmax / 1m)	97dB
Environmental conditions	
Environmental temperature range	-20°C ... +40°C
Protection class acc. to DIN EN60529	IP65
Ex-approval according to EC-RL 94/9/EC	 EEx de IIC T6 / 01 ATEX 122



 **4 970 0**

 **4 971 1**



Explosion-proof loudspeakers

Horn loudspeaker 25W / 100V, ex-proof, IP65, polyamid conductive

- Explosion-proof, dustproof and watertight housing
- Housing made of conductive plastic (polyamide)
- Suitable for use in Ex zones 1, 2, 21 and 22
- Robust construction, corrosion and heat resistant
- Pressure-resistant encapsulation of all electronic components
- Filter made of sintered metal
- Approved cable entries (M20 EExe ATEX), one of which has a replaceable blanking plug
- U-shaped stainless steel bracket, swivelling
- Low weight, easy to mount

The explosion-proof pressure chamber loudspeaker has been designed for use in hazardous areas of zones 1, 2, 21, 22 and in all temperature classes (environments with gases and vapours with an ignition temperature >85°C and ≤ 100°C).

In addition, the extremely corrosion- and heat-resistant loudspeaker is particularly suitable for use in wide-area, loud and harsh environments and is characterised by high efficiency, excellent syllable intelligibility as well as good directivity.

In addition to central speech via power amplifiers, it can also be connected as a call loudspeaker to NEUMANN WFD ex-proof call stations.

Art.-No.	4 970 0
Mechanical data	
Weight	Approx. 4.0kg
Dimensions (DxL)	Ø 235mm x 345mm
Housing colour	Black
Material	Conductive plastic (polyamide)
Cable entry ²⁾	2x M20
Electrical data	
Nominal power	25W / 100V
Transformer adjustment (100V)	25; 12; 8; 6; 3; 1W
Impedance	0.4; 0.83; 1.25; 1.66; 3.33; 10kΩ
Transmission range (-10db)	300Hz ... 7kHz
Mean sound pressure (1W / 1m)	106dB
Max. sound pressure (Pmax / 1m)	118dB
Environmental conditions	
Environmental temperature range	-30°C ... +50°C
Protection class acc. to DIN EN60529	IP65
Ex approvals	
According to EC Directive 94/9/EC	⊕ II 2 G EEx de IIC T6
According to EC Directive 94/9/EC, III-6	⊕ II 2 Ex tD A21 IP65 T 80°C

1) For assembly we recommend the use of the hook spanner art.-no. 97 9 4410 001 5.

2) Delivery with plastic cable glands

Explosion-proof loudspeakers

Horn loudspeaker 30W / 8Ω, ex-proof, IP65, polyamid conductive

- Explosion-proof, dustproof and watertight housing
- Housing made of conductive plastic (polyamide)
- Suitable for use in Ex zones 1, 2, 21 and 22
- Robust construction, corrosion and heat resistant
- Pressure-resistant encapsulation of all electronic components
- Filter made of sintered metal
- Approved cable entries (M20 EExe ATEX), one of which has a replaceable blanking plug
- U-shaped stainless steel bracket, swivelling
- Low weight, easy to mount

The explosion-proof pressure chamber loudspeaker was designed for use in hazardous areas of zones 1, 2, 21, 22 and in all temperature classes (environments with gases and vapours with an ignition temperature >85°C and ≤ 100°C).

In addition, the extremely corrosion- and heat-resistant loudspeaker is particularly suitable for use in wide-area, loud and harsh environments and is characterised by a high efficiency, excellent syllable intelligibility and good directivity.

Art.-No.	4 971 1
Mechanical data	
Weight	Approx. 3.6kg
Dimensions (DxL)	Ø 235mm x 345mm
Housing colour	Black
Material	Conductive plastic (polyamide)
Cable entry ²⁾	2x M20
Electrical data	
Nominal power	30W
Impedance	8Ω
Transmission range (-10db)	300Hz ... 7kHz
Mean sound pressure (1W / 1m)	106dB
Max. sound pressure (Pmax / 1m)	119dB
Environmental conditions	
Environmental temperature range	-30°C ... +50°C
Protection class acc. to DIN EN60529	IP65
Ex approvals	
According to EC Directive 94/9/EC	⊕ II 2 G EEx de IIC T6
According to EC Directive 94/9/EC, III-6	⊕ II 2 Ex tD A21 IP65 T 80°C

1) For assembly we recommend the use of the hook spanner art.-no. 97 9 4410 001 5.

2) Delivery with plastic cable glands

Explosion-proof loudspeakers

Horn loudspeaker 25W / 100V, ex-proof, IP66/67, polyester

- Plastic version
- Suitable for use in Ex zones 1, 2, 21 and 22
- For 100V public address systems
- Pivoting VA bracket with mounting holes
- IECEx certified

The explosion-proof pressure chamber loudspeaker is designed for use in hazardous areas of zones 1, 2, 21, 22 and in all temperature classes (environments with gases and vapours with an ignition temperature >85°C and ≤ 100°C).

The Ex-Loudspeaker is a high-performance explosion-proof loudspeaker with high speech and silver intelligibility.

Its good directivity and acoustic performance make it excellent for use in wide-area, loud and harsh environments. Certified for use in a wide temperature range of -55°C ... +55°C, the Ex enclosure is made of plastic with a robust thermoplastic sound guide.

The Ex loudspeaker is a corrosion-free, heat-resistant and aesthetically pleasing product. In addition to central speech via power amplifiers, it can also be connected as a call loudspeaker to NEUMANN WFD ex-proof call stations..

Art.-No.	919 1120 166 6
Mechanical data	
Weight	Approx. 5.8kg
Dimensions (DxL)	Ø 200mm x 280mm
Housing colour	Black
Material	Polyester, V0 flammable
Cable entry ¹⁾	2x M20 thread
Electrical data	
Nominal power	25W / 100V
Transformer adjustment (100V)	25; 12.5; 6; 4; 2; 1W
Impedance	0.4; 0.8; 1.16; 2.5; 5; 10kΩ
Transmission range (-10db)	350Hz ... 7kHz
Mean sound pressure (1W / 1m)	106dB (1kHz)
Max. sound pressure (Pmax / 1m)	120dB (1kHz)
Environmental conditions	
Environmental temperature range	-50°C ... +55°C
Protection class acc. to DIN EN60529	IP66 & IP67, NEMA 4X & 6
Certification	Ex d IIC T4/T5/T6 Gb, Ex tb IIIC T135°C/T100°C/T85°C Db, IP66

¹⁾ Delivery without cable glands!

Accessories / Article	Description	Art.-No.
Ex cable gland brass	1x M20	96916221040
Ex cable gland plastic	1x M20	96916221051



 **919 1120 166 6**

Explosion-proof loudspeakers

Horn loudspeaker 25W / 100V, ex-proof, IP66/67, aluminium / plastic

- Aluminium / plastic version
- Suitable for use in Ex zones 1, 2, 21 and 22
- For 100V sound reinforcement systems
- Pivoting stainless steel bracket with mounting holes
- IECEx, ATEX, Ex EAC & INMETRO certified

The explosion-proof pressure chamber loudspeaker is designed for use in hazardous areas of zones 1, 2, 21, 22 and in all temperature classes (environments with gases and vapours with an ignition temperature $>85^{\circ}\text{C}$ and $\leq 100^{\circ}\text{C}$).

The Ex-Loudspeaker is a high-performance explosion-proof loudspeaker with high speech and silver intelligibility.

Its good directivity and acoustic performance make it excellent for use in wide-area, loud and harsh environments. Certified for use in a wide temperature range of -55°C ... $+55^{\circ}\text{C}$, the Ex enclosure is made of plastic with a robust thermoplastic sound guide.

The Ex loudspeaker is a corrosion-free, heat-resistant and aesthetically pleasing product.

In addition to central speech via power amplifiers, it can also be connected as a call loudspeaker to NEUMANN WFD ex-proof call stations.

Art.-No.	919 1120 170 1
Mechanical data	
Weight	Approx. 3.95kg
Dimensions (DxL)	\varnothing 220mm x 313mm
Housing colour	Fire red (RAL 3000)
Material	Aluminium / plastic
Cable entry ¹⁾	2x M20 thread
Electrical data	
Nominal power	25W / 100V
Transformer adjustment (100V)	25; 12.5; 6; 2W
Impedance	0.4; 0.8; 1.16; 5k Ω
Transmission range (-10dB)	300Hz ... 8kHz
Mean sound pressure (1W / 1m)	105dB
Max. sound pressure (Pmax / 1m)	119dB
Beam angle	130° @ 1kHz & 32° @ 4kHz
Environmental conditions	
Environmental temperature range	-50°C ... $+55^{\circ}\text{C}$
Protection class acc. to DIN EN60529	IP66 & IP67, NEMA 4X & 6
Certification	IECEx, ATEX, Ex EAC & INMETRO

¹⁾ Delivery without cable glands!

Accessories / Article	Description	Art.-No.
Ex-proof cable gland brass, device group IIB	1x M20	96916221062
Ex-proof cable gland brass, device group IIC	1x M20	96916221073





Explosion-proof loudspeakers

Horn loudspeaker 15W / 100V, ex-proof, IP66, plastic

- Suitable for use in Ex zones 1, 2, 21 and 22
- Housing made of conductive plastic (antistatic)
- Housing UV-resistant
- Encapsulation
- Filter made of sintered metal
- Tested cable entries (M20 EExe ATEX)
- Stainless steel swivel mounting bracket
- Cable entries made of plastic
- Low weight, easy mounting
- Suitable for wall and ceiling mounting

The explosion-proof Loudspeaker is used in operating sites that process flammable substances. They can be used in all hazardous areas of zones 1, 2 and up to temperature class T6.

In addition, the loudspeaker is suitable for use in environments with high interference levels. It is characterised by high efficiency, excellent speech reproduction and good directivity.

In addition to central speech via power amplifiers, it can also be connected as a call loudspeaker to NEUMANN WFD ex-proof call stations.

Art.-No.	4 973 3
Mechanical data	
Weight	Approx. 3.5kg
Dimensions (DxL)	Ø 219mm x 287mm
Housing colour	Black
Material	Conductive plastic (antistatic)
Cable entry ¹⁾	2x M20
Electrical data	
Nominal power	15W / 100V
Transformer adjustment (100V)	15; 7.5; 4W
Impedance	0.66; 1.33; 2.5kΩ
Transmission range (-10db)	280Hz ... 10kHz
Mean sound pressure (1W / 1m)	107dB
Max. sound pressure (Pmax / 1m)	119dB
Environmental conditions	
Environmental temperature range	-20°C ... +55°C
Protection class acc. to DIN EN60529	IP66
Protection class	II
Ex approvals according to EC Directive 94/9/EC	Ex II 2G Ex mb de IIC T* / 05 ATEX 1097 *) T4 -55°C ≤ Tamb ≤ 80°C *) T5 -55°C ≤ Tamb ≤ 65°C *) T6 -55°C ≤ Tamb ≤ 55°C

1) Supplied with plastic cable glands

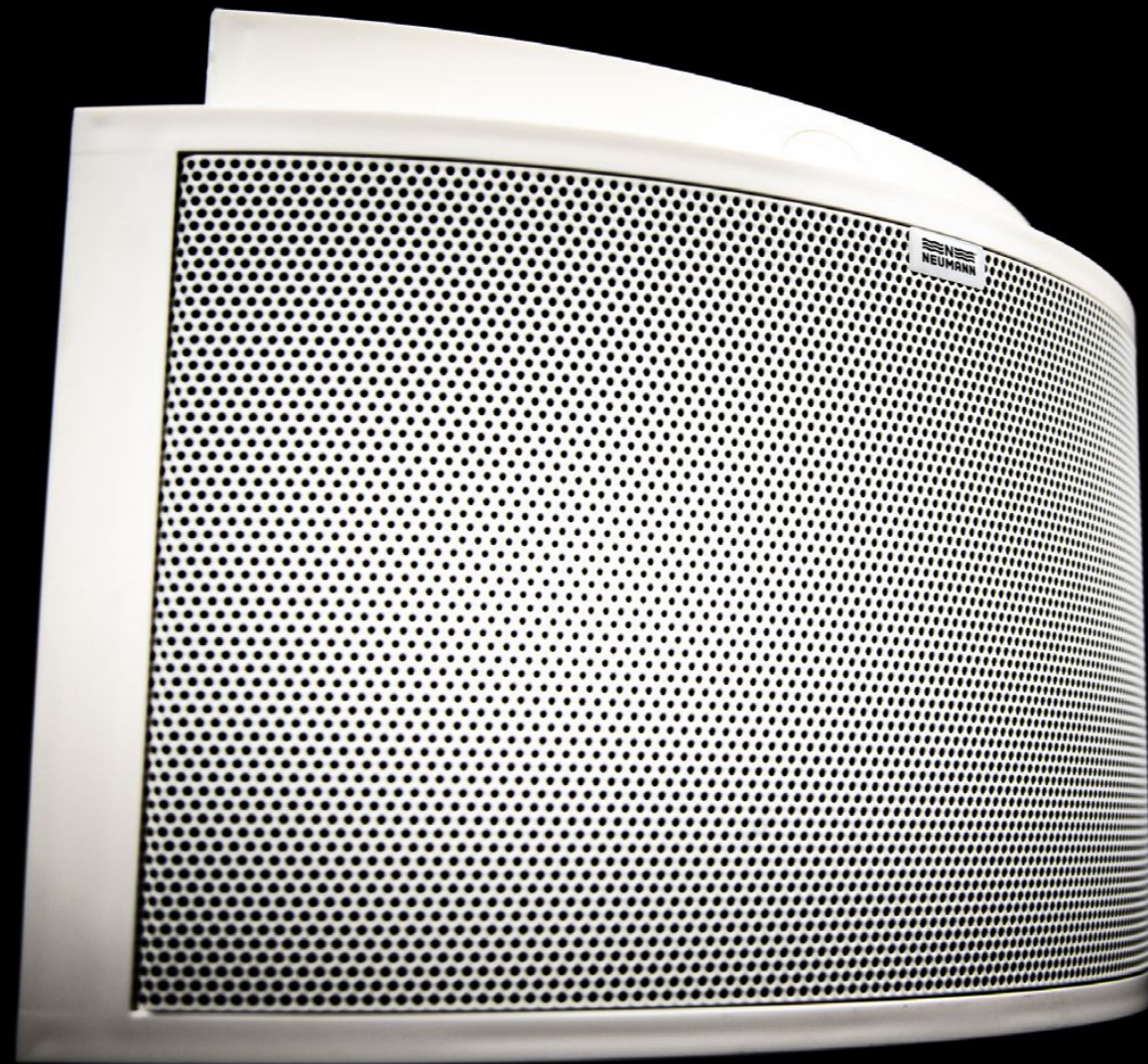


**Wall / Ceiling
loudspeakers**

Wall / Ceiling loudspeakers

Wall and ceiling loudspeaker 6W / 100V,
IP53, EN 54-24, plastic

certified
EN 54-24



- White plastic housing with perforated cover
- Suitable for wall and ceiling mounting
- Available with or without integrated volume control
- Certified according to EN 54-24

With its ventilated plastic housing made of white ABS, the wall and ceiling loudspeaker is particularly suitable for use in passenger information systems of local and long-distance public transport, as well as in public address systems, alarm systems and evacuation systems.

In addition, it is approved for use in fire alarm systems according to EN 54.

The symmetrical shape allows horizontal and vertical mounting. Screws and dowels are included in the scope of delivery. Anti-theft protection is ensured by appropriate components.

The loudspeaker is characterised by good music reproduction and clear syllable intelligibility and is available with and without integrated volume control.

Art.-No.	4 778 6	4 779 7
Mechanical data		
Integrated volume control	no	yes
Weight	Approx. 1.6kg	
Dimensions (WxDxL)	330mm x 240mm x 83mm	
Housing colour	Pure white (RAL 9010)	
Material	ABS-Plastic / aluminium perforated cover	
Connection	4-pole ceramic clamp	
Electrical data		
Nominal power	6W / 100V	
Transformer adjustment (100V)	6; 3; 1.5W	
Impedance	1.66; 3.33; 6.66kΩ	
Transmission range (-10dB)	80Hz ... 19kHz	
Mean sound pressure (1W / 1m)	93dB	
Max. sound pressure (Pmax / 1m)	101dB	
Sound pressure EN (1W / 4m)	76dB	
Maximum sound pressure EN (4m)	86dB	
Environmental conditions		
Environmental temperature range	-40°C ... +70°C	
Protection class acc. to DIN EN60529	IP53	

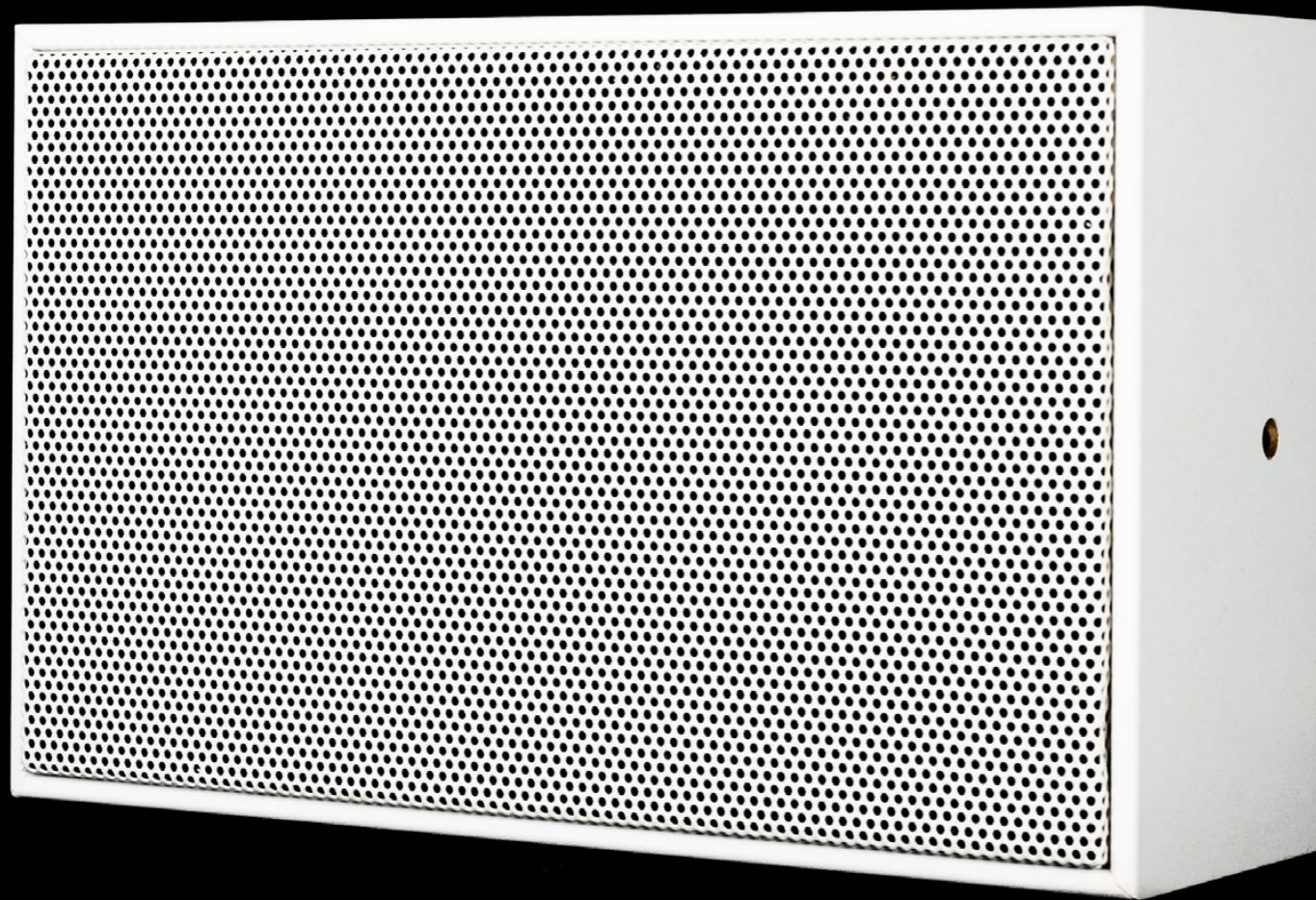
 **4 778 6**

 **4 779 7**

Wall / Ceiling loudspeakers

Wall and ceiling loudspeaker 6W / 100V,
IP53, EN 54-24, wood

certified
EN 54-24



- White wooden housing with perforated cover
- Suitable for wall and ceiling mounting
- Available with or without integrated volume control
- Certified according to EN 54-24

The wall and ceiling loudspeaker is equipped with a high-quality broadband loudspeaker and is characterised by good music reproduction and clear syllable intelligibility.

This loudspeaker is particularly suitable for use in passenger information systems for local and long-distance public transport, as well as in public address systems, alarm systems and evacuation systems.

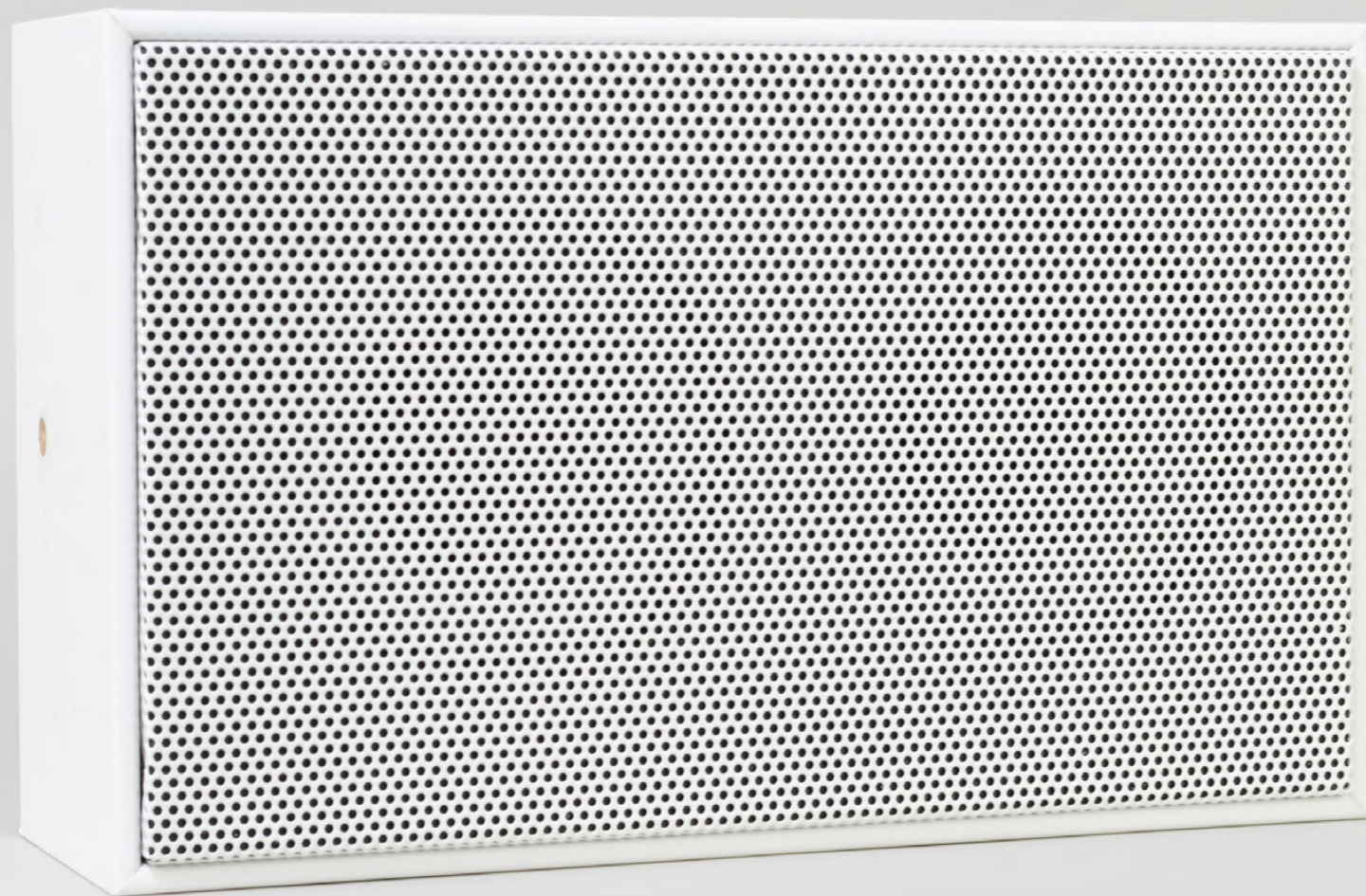
In addition, it is approved for use in fire alarm systems according to EN 54.

For mounting, the rear panel of the loudspeaker is fixed with two screws, then the housing is attached and held in place with two sturdy springs.

Art.-No.	4 775 3	4 776 4
Mechanical data		
Integrated volume control	no	yes
Weight	Approx. 1.4kg	
Dimensions (WxDxL)	280mm x 170mm x 65mm	
Housing colour	White	
Material	Wood / aluminium perforated cover	
Electrical data		
Nominal power	6W / 100V	
Transformer adjustment (100V)	6; 3; 1.5W	
Impedance	1.66; 3.33; 6.66kΩ	
Transmission range (-10db)	150Hz ... 20kHz	
Mean sound pressure (1W / 1m)	96dB	
Max. sound pressure (Pmax / 1m)	102dB	
Environmental conditions		
Environmental temperature range	-40°C ... +70°C	
Protection class acc. to DIN EN60529	IP53	

 **4 775 3**

 **4 776 4**



Wall / Ceiling loudspeakers

Wall and ceiling loudspeaker

2x 6W / 100V, A/B, IP53, EN 54-24, wood

certified
EN 54-24

- White housing with perforated cover
- Suitable for wall and ceiling mounting
- Designed for A/B operation
- Certified according to EN 54-24

The wall and ceiling loudspeaker of the A/B series is equipped with two independent transducer/loudspeaker combinations. Thus, a supply via two separate lines is possible.

The loudspeaker is characterised by good music reproduction and clear syllable intelligibility.

This loudspeaker is particularly suitable for use in passenger information systems of local and long-distance public transport, as well as in public address systems, alarm systems and evacuation systems.

In addition, it is approved for use in fire alarm systems according to EN 54.

The scope of delivery includes screws, dowels and the aluminium mounting bracket.

Art.-No.	4 777 5
Mechanical data	
Weight	Approx. 2.1kg
Dimensions (WxLxD)	265mm x 165mm x 88mm
Housing colour	Pure white (RAL 9010)
Material	Wood / aluminium perforated cover
Electrical data	
Nominal power	2x 6W / 100V
Transformer adjustment (100V)	2x 6; 3; 1.5W
Impedance	2x 1.66; 3.33; 6.66kΩ
Transmission range (-10dB)	80Hz ... 20kHz
Mean sound pressure (1W / 1m)	2x 92dB
Environmental conditions	
Environmental temperature range	-40°C ... +70°C
Protection class acc. to DIN EN60529	IP53

Wall / Ceiling loudspeakers

Wall and ceiling loudspeaker 6W / 100V, IP53, plastic



- Plastic housing with perforated plate cover
- Connection to 100V mains with 4-pole pressure clamp
- Built-in volume control

This wall and ceiling loudspeaker offers high efficiency and is suitable for rooms with medium noise levels.

Its beautifully designed plastic cabinet is equipped with a high-quality moisture-impregnated full-range driver for optimal speech and music reproduction.

Art.-No.	4 807 9	4 808 0
Mechanical data		
Integrated volume control	Yes	Yes
Weight	Approx. 1.3kg	Approx. 1.3kg
Dimensions (WxHxD)	260mm x 175mm x 81mm	260mm x 175mm x 81mm
Housing colour	Topaz	Traffic white (RAL 9016)
Material	Plastic, aluminium perforated cover	Plastic, aluminium perforated cover
Electrical data		
Nominal power	6W / 100V	6W / 100V
Transformer adjustment (100V)	6; 3; 1.5W	6; 3; 1.5W
Impedance	1.66; 3.33; 6.66kΩ	1.66; 3.33; 6.66kΩ
Transmission range (-10db)	150Hz ... 20kHz	150Hz ... 20kHz
Mean sound pressure (1W / 1m)	98dB	98dB
Max. sound pressure (Pmax / 1m)	103dB	103 dB
Environmental conditions		
Environmental temperature range	-40°C ... +70°C	
Protection class acc. to DIN EN60529	IP53	

 4 807 9

 4 808 0



Wall / Ceiling loudspeakers

Wall and ceiling loudspeaker 1W, active, IP53, plastic



- For operating voltages 24-60 V DC and 230 V AC
- Built-in power amplifier (active loudspeaker)
- Transformer-balanced input (galvanic isolation)
- Volume control on the front panel

This wall and ceiling loudspeaker made of ABS-Plastic has a built-in power amplifier (active loudspeaker) and serves as a listening loudspeaker in radio operation and on telephone company lines.

Art.-No.	4 611 2	4 612 3
Mechanical data		
Volume control	Yes	Yes
Weight	Approx. 0.6kg	
Dimensions (WxHxD)	200mm x 135mm x 90mm	
Housing colour	Grey white	
Material	ABS plastic, aluminium perforated cover	
Electrical data		
Operating voltage range	DC24 ... 60V	AC230V
Max. Quiescent current	20mA	15mA
Max. Operating current	Approx. 125mA	Approx. 25mA
Output power	1W	
Input voltage	150mV	
Transmission range	300Hz ... 10kHz	
Mean sound pressure (1W / 1m)	86dB	
Environmental conditions		
Environmental temperature range	-40°C ... +70°C	
Protection class acc. to DIN EN 60529	IP53	



Wall / Ceiling loudspeakers

Wall and ceiling loudspeaker 6W / 100V,
IP53, EN 54-24, built-in, fire dome, steel

certified
EN 54-24

- Steel version
- High-performance broadband system
- Patented Built-in system
- Quick assembly via stainless steel springs
- Supplied with fire dome
- Certified according to EN 54-24

The wall- and ceiling-mounted build-in loudspeaker is equipped with a 200mm high-performance wideband system.

Due to its outstanding speech intelligibility, it is excellently suited for use in passenger information systems of local and long-distance public transport, as well as in public address systems, alarm systems and evacuation systems.

In addition, it is approved for use in fire alarm systems according to EN 54.

The loudspeaker is characterised by good music reproduction and clear syllable intelligibility. The loudspeaker with white lacquered perforated metal cover is suitable for built-in installation in ceilings of all materials.

Thanks to the patented built-in system, the loudspeaker can be mounted in a few seconds with the help of stainless steel springs.

Art.-No.	4 797 7
Mechanical data	
Weight	Approx. 1.7kg
Weight (without fire dome)	Approx. 1.5kg
Dimensions (DxL)	Ø 252mm x 105mm
Housing colour	Pure white (RAL 9010)
Material	Steel
Connection	4-pole ceramic clamp
Ceiling cut-out	Ø 230mm
Electrical data	
Nominal power	6W / 100V
Transformer adjustment (100V)	6; 3; 1.5W
Impedance	0.16; 3.33; 6.66kΩ
Transmission range (-10dB)	70Hz ... 19kHz
Mean sound pressure (1W / 1m)	98dB
Max. sound pressure (Pmax / 1m)	106dB
Sound pressure EN (1W / 4m)	81dB
Maximum sound pressure EN (4m)	90dB
Environmental conditions	
Environmental temperature range	-40°C ... +70°C
Protection class acc. to DIN EN60529	IP53

Wall / Ceiling loudspeakers

Wall and ceiling loudspeaker 2x 6W / 100V, A/B, IP53, EN 54-24, built-in, fire dome, steel

certified
EN 54-24

- Steel version
- Quick assembly via stainless steel springs
- Supplied with Fire dome
- Certified according to EN 54-24

The wall and ceiling build-in loudspeaker of the A/B series is equipped with two independent transducer/ loudspeaker combinations.

Thus, a supply via two separate lines is possible. This loudspeaker is particularly suitable for use in passenger information systems of local and long-distance public transport, as well as in public address systems, alarm systems and evacuation systems.

In addition, it is approved for use in fire alarm systems according to EN 54.

The loudspeaker is characterised by good music reproduction and clear syllable intelligibility. The loudspeaker with white lacquered metal cover is suitable for built-in installation in ceilings of all materials. Thanks to the patented Built-in system, the loudspeaker can be mounted in a few seconds with the help of stainless steel springs.

Art.-No.	4 796 6
Mechanical data	
Weight	Approx. 1.7kg
Dimensions (DxL)	Ø 252mm x 105mm
Housing colour	Pure white (RAL 9010)
Material	Steel
Electrical data	
Nominal power	2x 6W / 100V
Transformer adjustment (100V)	2x 6; 3; 1.5W
Impedance	2x 1.66; 3.33; 6.66kΩ
Transmission range (-10dB)	80Hz ... 20kHz
Mean sound pressure (1W / 1m)	2x 92dB
Environmental conditions	
Environmental temperature range	-40°C ... +70°C
Protection class acc. to DIN EN60529	IP53

Wall / Ceiling loudspeakers

Wall and ceiling loudspeaker 6W / 100V, IP54, built-in, steel

- Steel version
- For 100V sound systems
- Patented built-in system
- Quick mounting via stainless steel springs
- Delivery without Fire dome

One-piece wall and ceiling build-in loudspeaker with ball impact resistant grille, suitable for build-in in ceilings of all kinds.

The 130mm chassis is characterised by high sound pressure and a very good transmission range. Due to the patented built-in system (stainless steel springs), this loudspeaker can be mounted in a few seconds.

The chassis is impregnated and thus protected from moisture.

Art.-No.	4 798 8	4 799 9
Mechanical data		
Weight	Approx. 0.85kg	
Dimensions (DxL)	Ø 167mm x 62mm	
Ceiling cut-out	Ø 140mm ... 150mm	
Housing colour	Pure white (RAL 9010)	
Material	Steel	
Connection	4-pole pressure clamp	
Electrical data		
Nominal power	6W / 100V	10W / 100V
Transformer adjustment (100V)	6; 3; 1.5W	10; 5; 2.5W
Impedance	1.66; 3.33; 6.66kΩ	1; 2; 4kΩ
Transmission range (-10dB)	70Hz ... 19kHz	
Mean sound pressure (1W / 1m)	93dB	
Max. sound pressure (Pmax / 1m)	101dB	103dB
Environmental conditions		
Environmental temperature range	-40°C ... +70°C	
Protection class acc. to DIN EN60529	IP54	

**Special
loudspeakers**



Special loudspeakers

Loudspeaker 4W / 100V, IP53, built-in, plastic



- Good speech intelligibility and high sound pressure
- Easy connection via pressure spring clamp
- Moisture-impregnated membrane, UV-resistant

This built-in loudspeaker in black plastic housing is equipped with an oval broadband loudspeaker and a transformer and is intended for use in 100V networks.

It can be used both indoors and outdoors. The connection is made by an easy-to-use pressure spring clamp.

The built-in Loudspeaker is designed for speech and music reproduction and is characterised by good speech intelligibility and a high sound pressure level.

Art.-No.	4 847 3
Mechanical data	
Weight	Approx. 0.7kg
Dimensions (WxHxD)	151mm x 107.5mm x 90mm
Housing colour	Black
Material	ABS-Plastic
Length of the connection cable	0.45m
Electrical data	
Nominal power	4W / 100V
Transformer adjustment (100V)	4; 2; 1W
Impedance	2.5; 5; 10kΩ
Transmission range (-10dB)	220Hz ... 12kHz
Mean sound pressure (1W / 1m)	91dB
Max. sound pressure (Pmax / 1m)	97dB
Environmental conditions	
Environmental temperature range	-40°C ... +70°C
Protection class acc. to DIN EN60529	IP53

Special loudspeakers

Loudspeaker 6W / 100V, weatherproof, IP65, surface-mounted, V4A



- Weatherproof, rustproof V4A stainless steel housing (IP65)
- Pressure chamber loudspeaker with good speech reproduction and high syllable intelligibility
- Two-layer loudspeaker fabric made of Saran® and double expanded metal grille
- Available in stainless steel or painted orange (RAL 2004)
- 2x mounting holes Ø 21mm for cable glands¹⁾ Pg13.5
- Incl. 2x M10 fixing screws

These weather-protected, rust-proof V4A stainless steel loudspeakers serve as auxiliary loudspeakers to increase speech power in noisy environments.

The loudspeakers are optimally protected against weather influences due to their robust construction and the splash-proof loudspeaker cover.

The loudspeakers can be mounted on walls, railings or masts and thus offer a wide range of possible uses. They can be used in tunnel emergency call systems as well as on construction machinery and other vehicles.

Art.-No.	4 751 7
Mechanical data	
Weight	Approx. 2.5kg
Dimensions (WxHxD)	144mm x 160mm x 94mm
Housing colour	Stainless steel or painted orange (RAL 2004)
Material	V4A Stainless steel (1.4571)
Electrical data	
Nominal power	6W / 100V
Transformer adjustment (100V)	6; 3; 1.5W
Impedance	1.66; 3.33; 6.66kΩ
Transmission range (-10db)	300 Hz ... 7kHz
Mean sound pressure (1W / 1m)	96dB
Max. sound pressure (Pmax / 1m)	106dB
Environmental conditions	
Environmental temperature range	-25°C ... +70°C
Protection class acc. to DIN EN60529	IP65

¹⁾ Cable glands not included in the scope of delivery.



Special loudspeakers

Loudspeaker 6W / 8Ω,
weatherproof, IP65, surface-mounted, V4A



- Weatherproof V4A stainless steel housing (IP65)
- Horn loudspeaker with good speech reproduction and high syllable intelligibility
- Two-layer loudspeaker fabric made of Saran® and double expanded metal grille
- Available in stainless steel or painted orange (RAL 2004)
- 2x mounting holes Ø 21mm for cable glands¹⁾ Pg13.5
- Incl. 2x M10 fixing screws

These weather-protected, rust-proof V4A stainless steel loudspeakers serve as auxiliary loudspeakers to increase speech power in noisy environments.

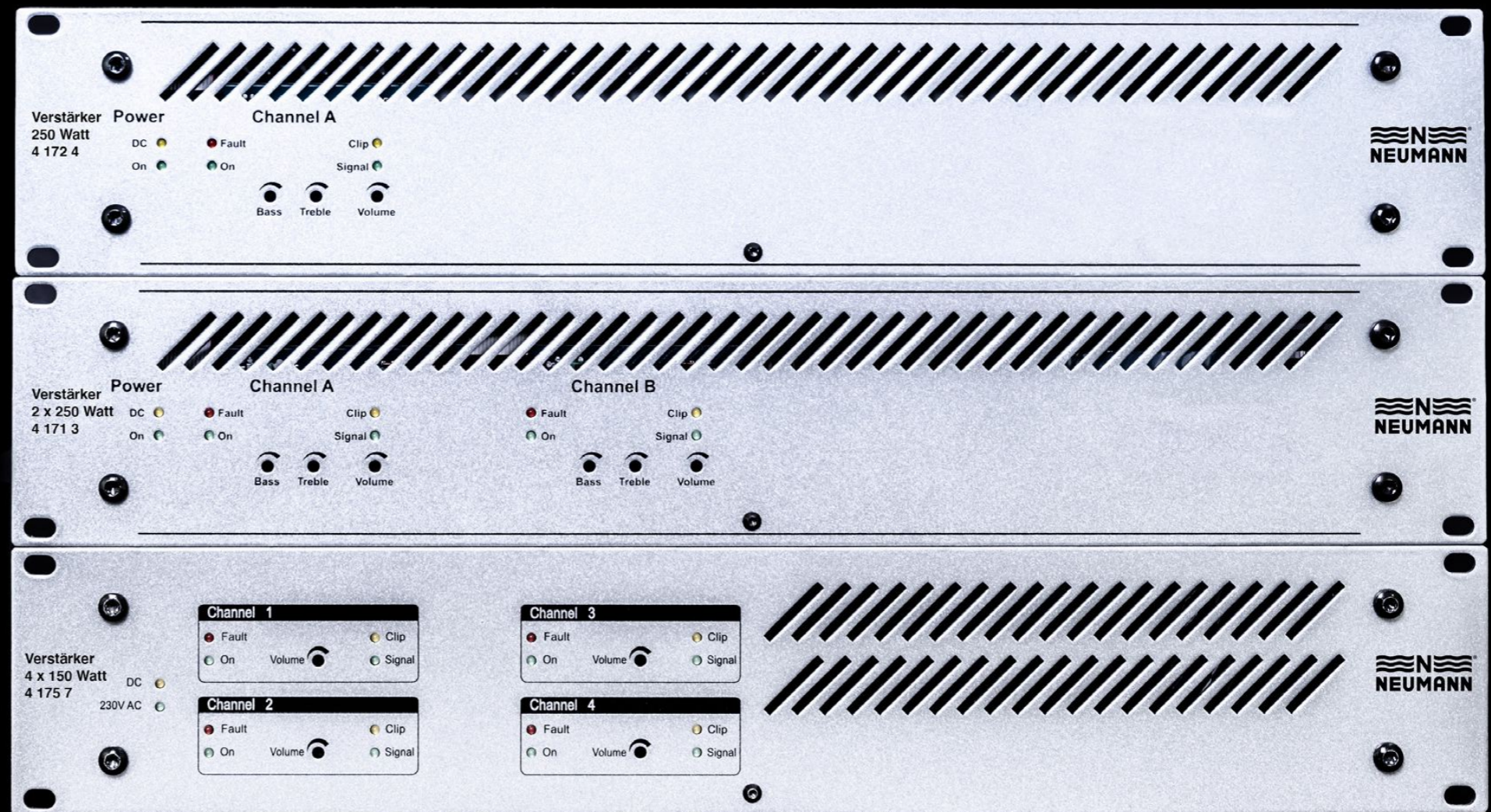
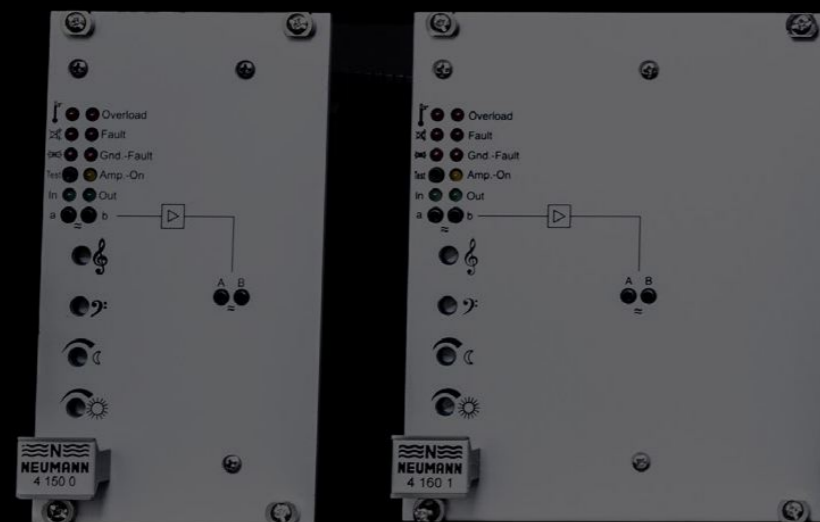
Due to their robust construction and the splash-proof loudspeaker cover, the loudspeakers are optimally protected against weather influences.

The loudspeakers can be mounted on walls, railings or masts and thus offer a wide range of possible uses. They can be used in tunnel emergency call systems as well as on construction machinery and other vehicles.

Art.-No.	4 752 8
Mechanical data	
Weight	Approx. 2.25kg
Dimensions (WxHxD)	144mm x 160mm x 94mm
Housing colour	Pure orange (RAL 2004)
Housing material	V4A Stainless steel (1.4571)
Electrical data	
Nominal power	6W
Impedance	8Ω
Transmission range (-10db)	300Hz ... 7kHz
Mean sound pressure (1W / 1m)	96dB
Max. sound pressure (Pmax / 1m)	106dB
Environmental conditions	
Environmental temperature range	-25°C ... +70°C
Protection class acc. to DIN EN60529	IP65

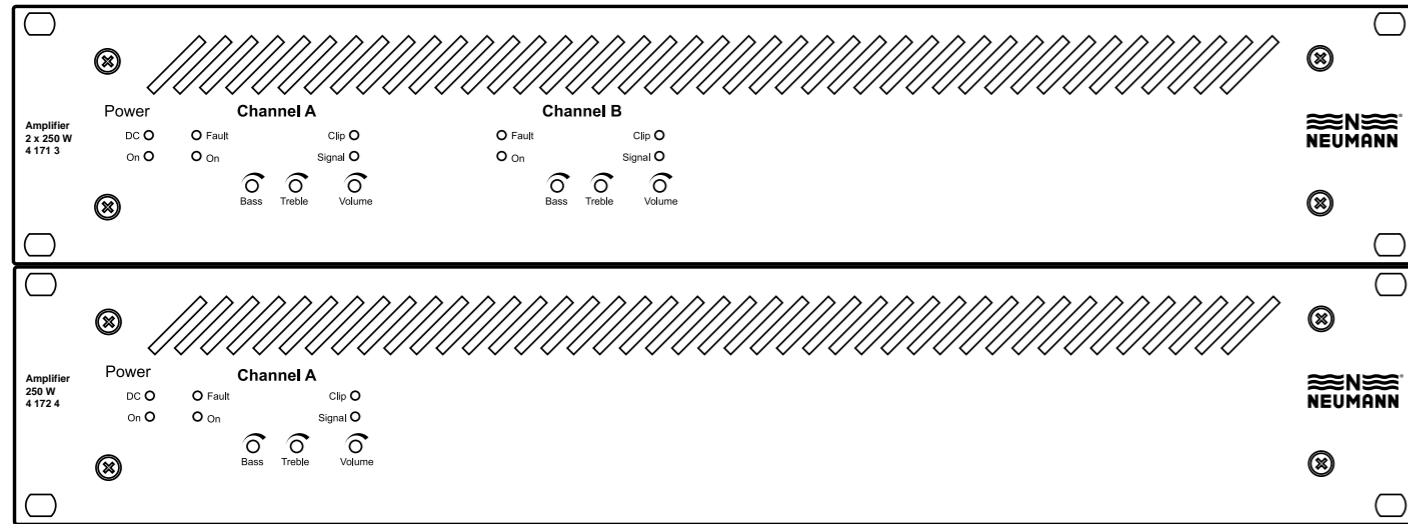
¹⁾ Cable glands not included in the scope of delivery.

Amplifiers



Amplifiers

Amplifier 250 / 300W and 2x 250 / 300W, Class-D-Technology



Amplifiers

Amplifier 250 / 300W and 2x 250 / 300W, Class-D-Technology

- High efficiency
- Low heat generation
- No active ventilation required
- Low built-in depth (important for cabinet build-in)
- Control LEDs for all signal and operating states on the front panel: Power ON, DC, Signal OK, Clipping, Fault
- Volume, treble and bass controls accessible from the front (adjustable with screwdriver)
- Transformer-balanced inputs
- Potential-free amplifier switch-on
- One potential-free fault signal change-over contact
- Monitoring: fuse failure, overload, overtemperature
- Protective circuit against no-load, short-circuit, overload
- AC230V / AC115V input voltage (switchable)
- DC48V / DC60V input voltage
- Amplifier is open-circuit and short-circuit proof
- 100V and 50V output, earth-free
- High-quality toroidal output and mains transformers
- All leads plugged in, with detachable screw connections
- Important: The 2-channel power amplifier (Art.-No.: 4 174 6) is already preset by the manufacturer. The settings cannot be changed by the customer!

The 1-channel and 2-channel power amplifiers are designed for permanent installation in ELA systems (DS-6, MDK, MF etc.) from Neumann Elektronik.

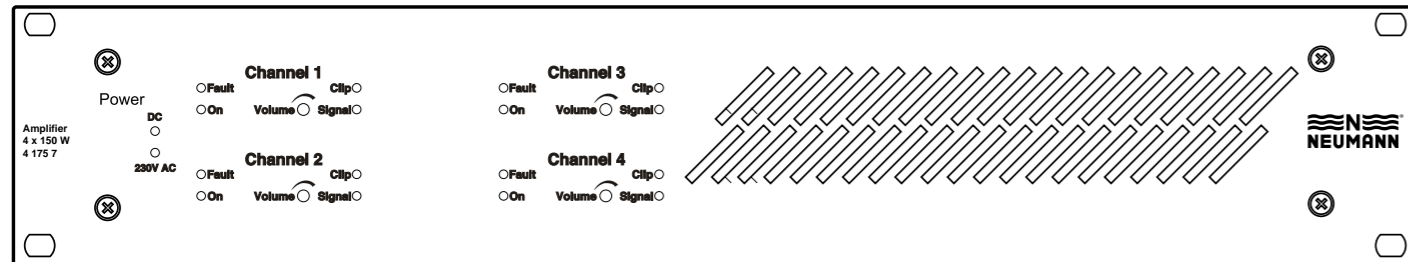
The amplifiers are designed in Class D technology. This circuit design guarantees a high efficiency and has a low heat generation.

The amplifiers generate an output nominal power of 1x 250 / 300W or 2x 250 / 300W at an operating voltage of AC230V / AC115V or DC48V ... DC60V.

Art.-No.	4 172 4		4 171 3 / 4 174 6	
Mechanical data				
Dimensions	19", 2U, 270mm deep			
Weight	11.5kg		15kg	
Electrical data				
Operating voltage	DC48...DC68V	AC230V / AC115V	DC48V...DC68V	AC230V / AC115V
Max. Current consumption	6A	1.4A	12A (both channels)	2.8A (both channels)
Output power according to IEC 268.3/19.3	300W in mains operation		2x 300W in mains operation	
Output power according to IEC 268.3/19.4	250W in mains operation		2x 250W in mains operation	
Input voltage	320mV			
Frequency range	80Hz ... 12kHz ± 1db			
Environmental conditions				
Environmental temperature range	+5 ... +40°C			

Amplifiers

Amplifier 4x 150W Class-D-Technology



Amplifiers

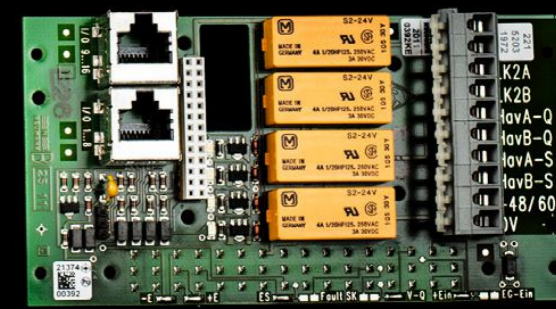
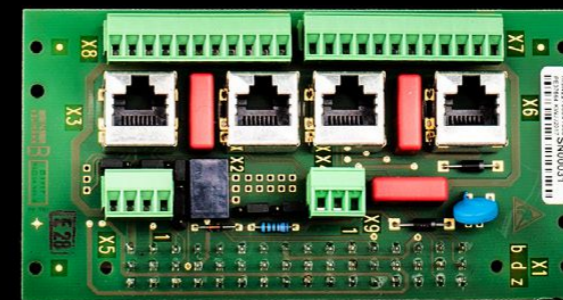
Amplifier 4x 150W Class-D-Technology


- High efficiency
- Low heat generation
- Active ventilation switched on automatically
- Low built-in depth (important for cabinet build-in)
- Low installation depth (important for cabinet installation)
- Control LEDs for all signal and operating states at the front plate: Power ON, DC, Signal OK, Clipping, Fault
- Volume control for each channel accessible from the front (adjustable with screw driver)
- Electronically-balanced inputs
- Automatically or remote amplifier activation
- Two notification contacts for channel monitoring
- Two notification contacts for power supply monitoring
- Protective circuit against temperature rise and overload
- AC 230V operation voltage and DC 48V operation voltage
- High quality toroid output and mains transformers
- All feed lines plugged, with removable screw connections
- Amplifier controlling via RS485 interface (optional)

The 4-channel final stage is designed for the constant installation into PA systems and for connecting loudspeakers in 100V technique. The amplifier can be switched over to 2-channel output using external wiring.

Each final stage is designed as a Class D technology product. This circuit concept guarantees high efficiency, low heat development and a low standby consumption. The amplifiers produce an actual power output of 4 x 150W respectively 2 x 300W with a power supply of AC 230V and / or DC 48V for redundant operating.

Art.-No.	4 175 7
Mechanical data	
Dimensions	19", 2U, 280mm deep
Weight	16.5kg
Electrical data	
Operating voltage	DC 48V / AC 230V
Max. Current consumption	13.5A / 3.7A
Standby	0.3A 14.4W / 0.045A 10W
Output power	4 x 150 W, each 100V at 66 Ω 2 x 300 W, each 100V at 66 Ω
Input sensitivity	380mV / 10kΩ
Frequency range	80Hz ... 22kHz - 3db
Environmental conditions	
Environmental temperature range	+5 ... +40°C



 **4 150 0**
 **4 160 1**

 **22 1 5004 150 0** Amplifier backplane for DS-6 PA Control
 **22 1 5203 197 2** Amplifier backplane, LC 1, LC 2
 **22 2 5303 197 4** Amplifier backplane Extension, LC 3, LC 4

Amplifiers

Amplifier 25 / 50W

- Functions according to DIN EN60849 regulation
- Volume separately adjustable for day and night operation
- Low distortion factor $\leq 0.5\%$
- Treble and bass control
- Electronic, temperature-dependent
- switch-off from 85°C $\pm 3K$
- Light-emitting diode displays on the front panel of the following Functions:
 - Switch-on control "Amp.-ON
 - Earth fault, "Gnd.-Fault
 - Interruption of the loudspeaker circuit
 - Overload or short-circuit "Overload
 - Overtemperature
 - Fuse failure
 - General fault "Fault
 - Level control for input and output signals
 - Output signals "In" and "Out
- Galvanically free switch-on
- Mandatory call-in for loudspeaker
- Switchable input sensitivities
- Loudspeaker protection by active high-pass filter
- Attenuators for different input voltages
- Open-circuit and short-circuit proof

The 25 / 50W amplifier, which was developed in a very compact design, serves to amplify the power of Neumann Elektronik GmbH DS-6 systems and also offers the possibility of connection to all voice communication centres with an analogue interface.

Thanks to different operating voltages, flexible use is possible. A special field of application is the public address and alarm system for small areas and fire compartments in office buildings, warehouses and storage areas, production environments, building yards and workshops.

Art.-No.	4 150 0		
Mechanical data			
Dimensions	14HP and 3U		
Weight	1.039kg		
Electrical data			
Nominal operating voltage	DC24V (DC26.5V)	DC48V	DC60V
Max. current consumption	2.1A	2.1A	1.8A
Audio frequency output power	20 / 25W	50W	50W
Input voltage 1	120mV		
Temperature limitation in °C	$\geq 75^\circ \pm 3K$		
Temperature switch-off in °C	$\geq 85^\circ \pm 3K$		
Frequency range	80Hz ... 12kHz -3db		
Environmental conditions			
Environmental temperature range	-5 ... +40°C		

Amplifiers

Amplifier 100W

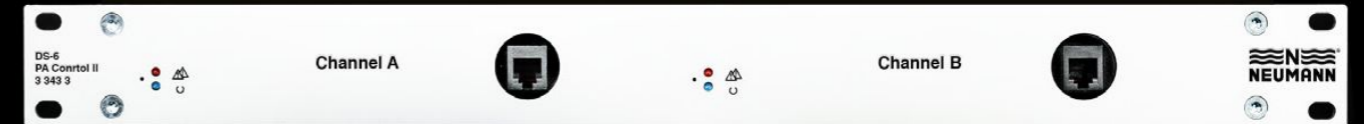
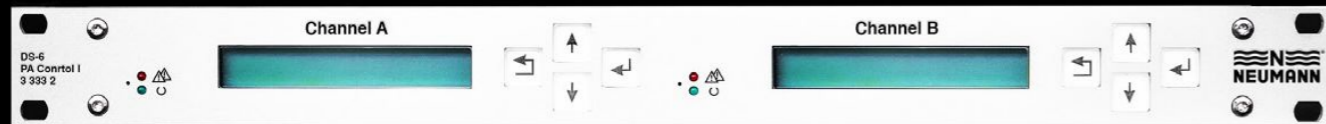
- Functions according to DIN EN60849 regulation
- Volume separately adjustable for day and night operation
- Low distortion factor $\leq 0.5\%$
- Treble and bass control
- Electronic, temperature-dependent
- switch-off from 85°C $\pm 3K$
- Light-emitting diode displays on the front panel of the following Functions:
 - Switch-on control "Amp.-ON
 - Earth fault, "Gnd.-Fault
 - Interruption of the loudspeaker circuit
 - Overload or short-circuit "Overload
 - Overtemperature
 - Fuse failure
 - General fault "Fault
 - Level control for input and output signals
 - Output signals "In" and "Out
- Galvanically free switch-on
- Mandatory call-in for loudspeaker
- Switchable input sensitivities
- Loudspeaker protection by active high-pass filter
- Attenuators for different input voltages
- Open-circuit and short-circuit proof

The 100W amplifier, which was developed in a very compact design, serves to amplify the power of Neumann Elektronik GmbH DS-6 systems and also offers the possibility of connection to all voice communication centres with an analogue interface.

Thanks to different operating voltages, flexible use is possible. A special field of application is the public address and alarm system for small areas and fire compartments in office buildings, warehouses and storage areas, production environments, building yards and workshops.


Art.-No.	4 160 1	
Mechanical data		
Dimensions	21HP and 3U	
Weight	1.910kg	
Electrical data		
Nominal operating voltage	DC48V	DC60V
Max. current consumption	4,3A	3.5A
Audio frequency output power	100W	
Input voltage 1	120mV	
Temperature limitation in °C	$\geq 75^\circ \pm 3K$	
Temperature switch-off in °C	$\geq 85^\circ \pm 3K$	
Frequency range	80Hz ... 12kHz -3db	
Environmental conditions		
Environmental temperature range	-5 ... +40°C	

Control and monitoring components



 3 342 2

 4 171 3

 3 343 3

 4 171 3

Control and monitoring components

DS-6 PA-Control I and II

DS-6 PA-Control I and II combine as ELA control units the control and monitoring of a 100V PA system with a maximum amplifier power of 2x 250W on a DS-6 system. In its compact 19" design with one height unit, the units replace a multitude of individual components, all of which required a great deal of wiring.

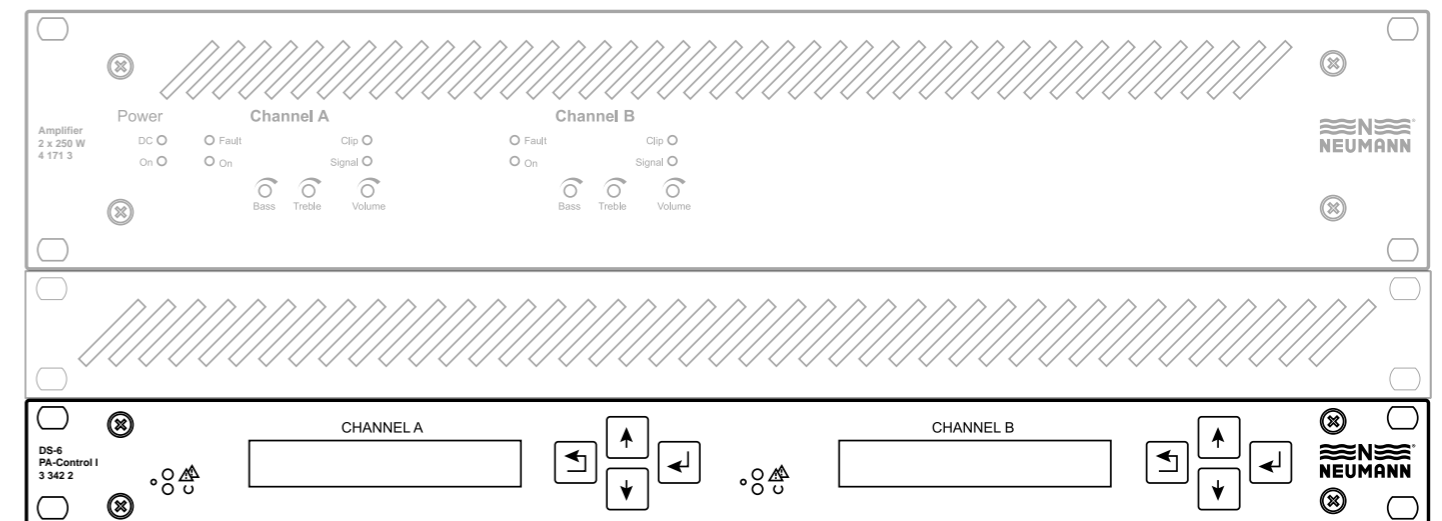
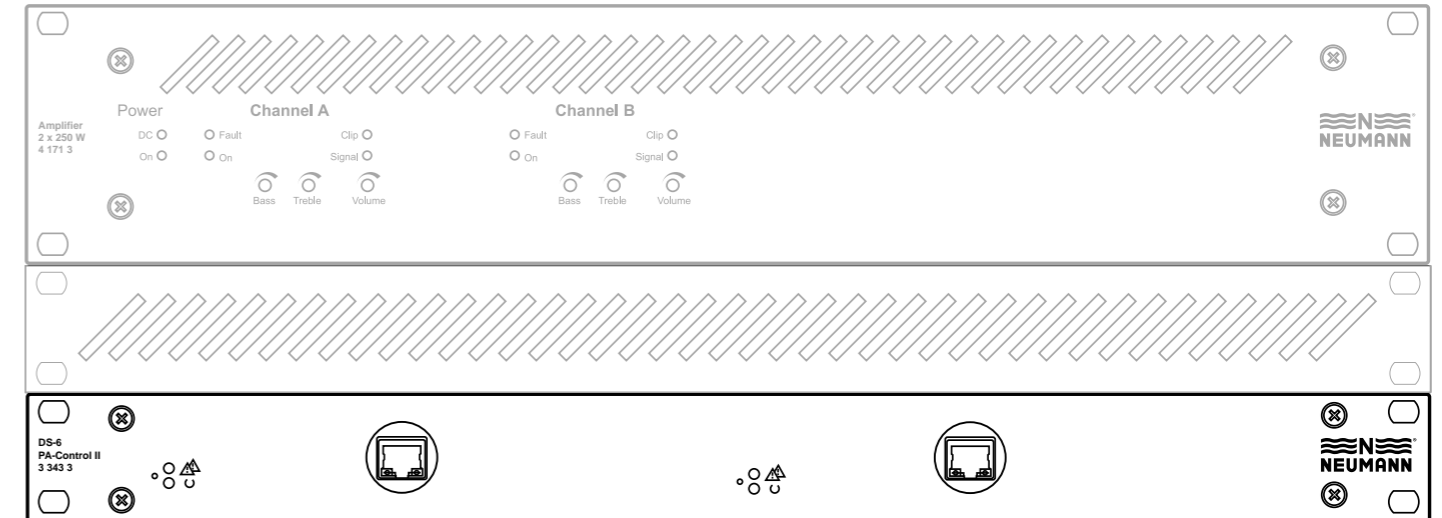
A modern PA system with DS-6 PA controls can be wired almost completely with pre-assembled system cables in a plug-in manner. Depending on the version of the PA Control, configuration can be carried out via the control panel with display or the serial interface or, in the case of the PA Control II, only via the serial interface on the unit. Optionally, a remote solution is also available, in which case the serial interface is integrated into the network via additional components that are available as accessories. Impedance monitoring, amplifier failure, as well as overload and earth-fault detection of the PA system can be configured via integrated software packages.

As a standard feature, one zone or one loudspeaker circuit can be supplied with Neumann amplifiers of the delivery number 41713. By means of optional additional components, which can be integrated into the unit, an extension to up to six zones with the above-mentioned monitoring is feasible.

In addition, in zone one, as well as in the optional zone two, in the case of ring-shaped cabling, the cable loops can be monitored and fed from both sides in the event of an interruption.

Control and monitoring components

DS-6 PA Control I and II



Control and monitoring components

DS-6 PA-Control I and II

- 2 redundant DS-6 Ethernet RJ45 LAN interfaces
- Monitored DC48V ... DC60V supply input
- Amplifier monitoring with N+1 emergency function
- Depending on the unit, RS232 interface for configuration and error message on front and rear side, or control panel with display and RS232 interface for configuration and error message on rear side
- Main and secondary fault alarm contact with NC and NO contact
- 1 or optionally up to 6 zones or loudspeaker circuits can be controlled
- Fuse monitoring
- Volume night reduction
- Amplifier failure monitoring even during sound reinforcement
- No pilot tone monitoring necessary for automatic switchover to redundant amplifier, no additional power loss at the amplifier
- Loudspeaker circuit impedance monitoring
- Loudspeaker circuit current monitoring
- Earth-fault monitoring of the loudspeaker line
- 1 or optionally 2 loudspeaker loop monitors
- Network monitoring
- Optional environmental noise-dependent volume control

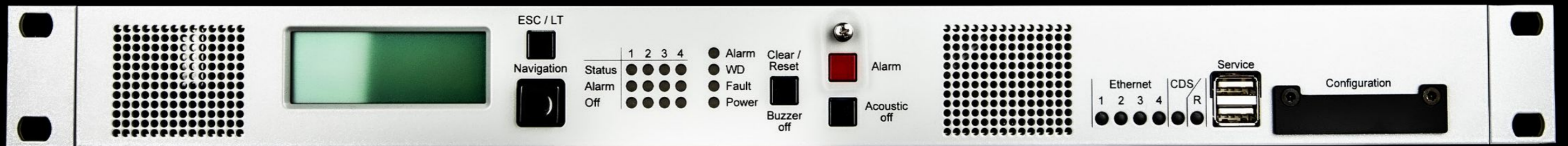
Art.-No.	3 342 2	3 343 3
Version	Control panel with display and RS232 interface on the rear side	RS232 interface on the front and rear
Mechanical data		
Dimensions	Width: 19", Height: 1HE according to DIN EN 60297 Built-in depth (housing without connectors): 284 mm	
Weight	Approx. 4kg	
Technical data		
Audio channels	2 channels	
Network interfaces	2x LAN per channel	
Operating voltage	2x DC43V... DC72V	
Nominal power input min.	4W per channel	
Nominal power input max.	8W per channel	
Max. power to be monitored	250W per channel	
Environmental conditions		
Environmental temperature range	+5 ... +40°C	
Protection class acc. to DIN EN 60529:	IP20	

Control and monitoring components

DS-6 PA-Control I and II accessories

Article	Description	Art.-No.
Additional plate 2 ... 4 zones	Analogue additional plate for expansion to up to 4 zones or speaker circuits	22 2 5203 343 6
Additional plate 2 ... 6 zones	Analogue additional plate for expansion to up to 6 zones or speaker circuits	22 2 5303 343 7
Additional plate 2 ... 6 zones+	Analogue additional plate for expansion to up to 6 zones or loudspeaker circuits and environmental noise dependent volume control	22 2 5303 332 3
Standard steel cabinet	Pre-wired standard steel cabinet with temperature controlled roof fan, swing frame, power supply, circuit breaker and switch, including wiring and mounting material. Dimensions: width: 800mm, height: 2000mm, depth: 600mm.	64 1 0136 197 8
Accident - Unit 2U	Consisting of 250W emergency amplifier, including circuit breaker, system cables and mounting material.	62 2 0236 197 8
Redundancy - Unit 1U	Consisting of 19" switch, including circuit breaker, socket, cables and mounting material	62 2 0336 197 9
Battery - Unit 3U	Consisting of emergency power battery 48V 18AH in 19" case, including cables and mounting material.	62 2 0436 197 0
I/O module - unit on mounting rail	Consisting of I/O module, power supply unit, terminal blocks, cables and mounting material for rear panel mounting. Various software packages are available for the I/O module unit, of which one software can always be saved to an I/O module unit: Fault management Flashlight connection 2-wayVirtual keystroke Impedance measurement NTP	62 2 0536 197 1 27 9 1004 475 9 27 9 1904 475 8 27 9 1704 475 6 27 9 2004 475 0
System cable DS-6 PA-Control to amplifier, 0.7 m length	For connecting a DS-6 PA Control to an amplifier.	22 3 0303 332 1
System cable zones - loop/back panel	This system cable is used to route the ABs of zones 1 ...6, for further cabling on terminal blocks on the rear wall and to route the returns of zones 1 and 2 from the terminal blocks to DS-6 PA Control.	22 2 0903 332 6
System cable 100V-AB-Bus, 0.3 m length	For connecting the 100V-AB bus of two DS-6 PA Control devices in emergency mode and for one channel.	
System cable extension 100V AB bus, 0.7 m length	For extending the system cable. This allows the system cable 100V-AB-Bus to be extended to a length of 1m.	
pre-assembled single wires, 0.3 m length socket housing	For extending the system cable 100V-AB bus to connect a further amplifier in case of emergency. To extend the complete bus width, 6 single wires and a socket housing are required per DS-6 PA Control.	96 9 1640 391 8 96 9 1640 381 7
single wires, 0.7 m length	For extending the system cable 100V AB bus to connect an emergency amplifier. 2 single wires are required for each backup amplifier.	22 4 0503 332 4
System cable NF-ab bus, 0.5 m length	For connecting the NF-ab bus of two DS-6 PA Control devices and for one channel.	99 9 1980 162 4
System cable NF-ab bus, 1.0 m length	For connecting the NF-ab bus of two DS-6 PA Control devices and for one channel.	99 9 1980 165 7
System cable extension, 0.7 m length	For extending the NF-ab bus to connect one or maximum two backup amplifiers. Four wires for the first and four wires for the second backup amplifier.	22 4 060 3332 5
Bridge for the 100V AB bus	During operation of the system while the DS-6 PA-Control is unplugged	
Bridge for the NF-ab bus	During operation of the system while the DS-6 PA-Control is unplugged	96 9 1630 210 7

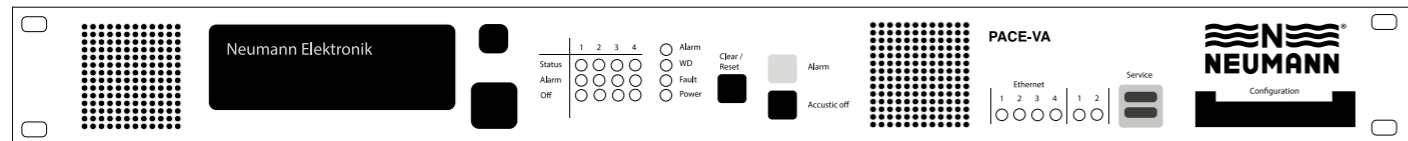
Voice alarm center unit PACE-VA EN 54-16



Control and monitoring components

PACE-VA, EN 54-16 Voice alarm center unit

certified
EN 54-16



The PACE-VA is an ultra-compact, multi-channel public address system.

It is used to transmit alarm and evacuation announcements as well as general information and music with high quality.

The PACE-VA fulfils all requirements of EN 54-16 and is designed for use as a voice alarm system (SAA) in accordance with VDE0833-4 and supports staged evacuation by configuring alarm sequencers. The high availability in operation, a free network topology as well as the possibility of redundant interconnection allows the application of PACE-VA for all security levels and in all building classes.

Standard protocols are used for the connection of external network components.

The PACE system setup and configuration is very simple due to the auto-discovery function within WeNet. The monitoring of the transmission paths and the integrated error check of all system interfaces and ports reduce the effort for inspection and maintenance.

A comprehensive range of products and accessories enables flexible expansion and adaptation of the PACE-VA to different installation environments.



Control and monitoring components

PACE-VA, EN 54-16 Voice alarm center unit

certified
EN 54-16

- 19" width with 1U
- 4 integrated amplifiers, 150W each
- 8 loudspeaker circuits, galvanically isolated
- 4 audio outputs
- 4 audio inputs
- 8 control inputs
- 8 control outputs
- 4 inputs for measuring microphone
- 4 Ethernet ports
- 2 USB ports
- EN 54-16 approval
- Amplifier variably configurable
- Impedance monitoring
- Power monitoring
- Earth-fault monitoring
- Backup amplifier switching

Art.-No.	3 344 4
Mechanical data	
Dimensions (HxWxD)	43.7mm x 482.5mm x 360 mm
Built-inmaße	Width 19", 1U according to DIN EN 60297, installation depth: 360mm without connectors (space required for cabling >= 90mm)
Weight	Approx. 5.5kg
Technical data	
Nominal operating voltage (voltage range)	DC48V (DC42V ... DC60V) AC230V (AC100V ... AC260V) , 40Hz ... 60Hz
Peak input current	20A (DC48V), 3,5A (AC230V)
Inrush current	<25A (DC48V), <16A (AC230V)
Power dissipation (in idle mode) plus per active amplifier Speech reinforcement (-12dB) Sound reinforcement (-9dB) Max. output power (0dB)	25W +10W +15W +30W
Connected load / max. power consumption	1kW
Amplifier data	
Quantity	4x Class D
Amplifier outputs [LS Out]	8 (4x with A/B wiring)
Amplifier type	100V, galvanically isolated
Output power	4 x 150W (4 x 200W according to EIA SE-101-A-1949) EN60268-3:2013 distortion limited output power DIN EN 54-16 Output power requirement FTC 63FR37233 Title 16, paragraph 1, part 432, rated power EIA SE-101-A-1949
Power output configuration	4 x 150W (4 x 200W according to EIA SE-101-A-1949) 2x 300W (2x 400W according to EIA SE-101-A-1949) 1 x 300W, 2x 150W (2x 200W according to EIA SE-101-A-1949) 1 x 450W, 1 x 150W (1 x 200W according to EIA SE-101-A-1949) 1 x 600W (1 x 800W according to EIA SE-101-A-1949)





The technology in detail

The technology in detail

IP protection classes

According to DIN 40 050 / IEC / VDE 0470 / EN 60529.

The degrees of protection are identified by internationally valid abbreviations: a two-digit IP code number (International Protection) indicates the degree of protection of the enclosure against the ingress of foreign bodies, dust and water.

Example of a code number: IP65¹⁾.

First IP code number	Protection levels for contact and foreign body protection	Second IP code number	Degrees of protection for water protection
0	Unprotected	0	Unprotected
1	Protected against the penetration of large foreign bodies with a diameter greater than 50mm.	1	Protected against the penetration of vertically falling dripping water
2	Protected against the penetration of medium-sized foreign bodies with a diameter greater than 12mm	2	Protected against dripping water falling at an angle of up to 15° from the vertical.
3	Protected against the penetration of small foreign bodies with a diameter greater than 2.5mm.	3	Protected against water spray falling at any angle up to 60° from vertical
4	Protected against the penetration of tools, wires (granular foreign bodies) with a diameter greater than 1.0mm.	4	Protected against water splashing against the equipment from all directions.
5	Complete protection against contact with live or internal moving parts. Protection against harmful dust deposits. The ingress of dust is not completely prevented, but the dust must not penetrate in such quantities that the function is impaired.	5	Protected against water jets from a nozzle directed against the equipment from all directions.
6	Complete protection against contact with live or internal moving parts. Protection against ingress of dust.	6	Protected against strong jets of water or temporary flooding
		7	Protected against temporary immersion in water, under the specified pressure/time conditions of 0.15-m
		8	Protected against permanent immersion in water
		9K	Protected against water directed against the enclosure from any direction under high pressure/steam jet cleaning

1) If no IP degree of protection is specified, the letter X replaces the respective digit, e.g. IPX4.


The technology in detail

General information on the marking of explosion-protected equipment

The marking of electrical equipment and protective systems intended for use in potentially explosive atmospheres is carried out in accordance with the requirements of EC Directive 2014/34/EU.

Example of labelling:  II 2G Ex db ib IIC T4

Explanation of this example

	Ex sign
II	Device group II
2	Device category 2 (open-pit)
G	Gases/vapours, suitable for zone 1 and 2
Ex	Explosion protection according to EN IEC 60079-0 ff
db	Pressure-proof enclosure Ex d
ib	Intrinsic safety Ex i
IIC	Explosion group (open pit, subgroup C)
T4	Temperature classification

Explanation of explosion protection:

1. Zones / Unit group / Unit category

There are 2 equipment groups: for underground use the number “I” is assigned, above ground the number “II”. Hazardous explosive atmospheres are divided into zones or according to the degree of probability of the occurrence of an explosive atmosphere. Equipment of the corresponding equipment category (area of use) must be used in the respective zones. In the current IEC regulation, the zones are defined as follows:

Classification of the Ex-areas / equipment category / equipment group				
Combustible substances	Behaviour of the combustible substances	Zones	Equipment group (use above ground or underground)	Device category
G: Gases, mists, vapours	Are present constantly, for a long time or frequently	Zone 0	II	1G
	Occasionally occur	Zone 1	II	2G (also 1G)
	Probably do not occur, if they do, only rarely or briefly	Zone 2	II	3G (also 2G and 1G)
D: Dust	Are present constantly, for a long time or frequently	Zone 20	II	1D
	Occasionally occur	Zone 21	II	2D (also 1D)
	Probably not occur due to whirled-up dust, if only rarely or for a short time	Zone 22	II	3D (also 2D and 1D)
M: Methane / Dust	-	Mining	I	M1 M2 or M1

The technology in detail

General information on the marking of explosion-protected equipment

Explosion subgroup : Classification of gases and vapours

Equipment group “II” is divided into three gas groups, with IIA being the least flammable and IIC the most flammable. In the USA there is a different division according to “Classes” (I, II, III): “Class I” refers to gases and vapours (see table).

Explosive subgroup / Representative vapours		
CENELEC / IEC	Representative vapours	U.S.A. and Canada
I	Methane	No assignment
IIA	Propane, n-Butane, Kerosene	Class I, Group D
IIB	Ethylene, Hydrogen sulphide, Ethyl ether	Class I, Group C
IIC	Hydrogen, Ethine (Acetylene), Carbon disulphide	Class I, Group B
IIC	Hydrogen, Ethine (acetylene), Carbon disulphide	Class I, Group A

2. Explosion protection

In order for electrical equipment to be used safely in potentially explosive atmospheres, explosion protection techniques must be taken to prevent ignition of the atmosphere. This can be prevented with different techniques, depending on the application and the equipment: Separation (o, q, m), exclusion (p), confinement (d), special mechanical design (n, e), energy limitation (ia, ib), and other measures (s). Each of these techniques is subject to national and or international standards and regulations.

Ex: Explosion protection certified according to CENELEC standard EN60079...Explosion protection certified according to CENELEC standard EN60079...complies with the applicable EN standards and contains safety measures for equipment that ensure at least the equivalent safety compared to the European standards.

Type of protection / Technology / Standards					
Labelling	Ignition protection type	Technology	CENELEC	IEC	DIN
	General requirements for all methods		EN60079-0	IEC60079-0	DIN EN60079-0
Ex d	Flameproof enclosure	Transmission of an explosion to the outside is excluded	EN60079-1	IEC60079-1	DIN EN60079-1
Ex e	Increased security	Special mechanical design	EN60079-7	IEC60079-7	DIN EN60079-7
Ex p	Pressurised enclosure	E atmosphere is separated from the ignition source	EN60079-2	IEC60079-2	DIN EN60079-2
Ex m	Potting enclosure		EN60079-18	IEC60079-18	DIN EN60079-18
Ex o	Oil enclosure		EN60079-6	IEC60079-6	DIN EN60079-6
Ex q	Sandkapselung		EN60079-5	IEC60079-5	DIN EN60079-5
Ex n	Without sparking (nA) / vapour-proof enclosure (nR)	Special mechanical design (only for zone 2 or 22)	EN60079-15	IEC60079-15	DIN EN60079-15
Ex i	Intrinsic safety	Spark energy limitation	EN60079-11	IEC60079-11	DIN EN60079-11
Ex s	Special protection	Measures other than the standardised types of protection			

The technology in detail

General information on the marking of explosion-protected equipment

4. Classification of the temperature classes

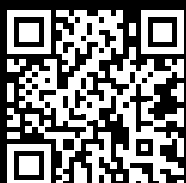
Gas-air mixtures can be ignited not only by sparks but also by contact with hot surfaces. If the surface temperature of a piece of equipment reaches the ignition temperature of the explosive atmosphere, ignition can occur. For this reason, all electrical equipment used in potentially explosive atmospheres is divided into temperature classes.

Temperature classification		
	Permissible surface temperature of the electrical equipment in °C	Permissible surface temperature of the units in °C
T1	> 450°C	450°C
T2	> 300°C ... ≤ 450°C	300°C
T3	> 200°C ... ≤ 300°C	200°C
T4	> 135°C ... ≤ 200°C	135°C
T5	> 100°C ... ≤ 135°C	100°C
T6	> 85°C ... ≤ 100°C	85°C



Neumann Elektronik GmbH owns a registered trademark (brand).
Other products and company names mentioned are trademarks
or registered trademarks of their respective owners.

Misprints, errors, technical or other changes as well as changes
in the availability of individual products are expressly reserved.
© Neumann Elektronik GmbH, 2021.



Neumann Elektronik GmbH

**Lahnstrasse 31-33
45478 Mülheim an der Ruhr
Germany**

**info@neumann-elektronik.com
www.neumann-elektronik.com**