

# PRODUKTKATALOG ■

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# DD60

Dynamic hand  
microphone  
with one button

Article-No.:  
**2204-005-000-51**



## Product:

### Characteristics

- Dynamic microphone capsule
- Rugged plastic housing
- Durable PEIGUM® spiral cable
- Easy to operate push to talk button

### Options

- Customized plugs and cables
- Microphone preamplifier

### Application range

- Radio and PA systems in mobile applications

### Accessories

- HV7 mount
- HV13 mount
- HV21 mount

### Scope of delivery

- Hand microphone with PEIGUM® spiral cable
- HV7 mount

## Technical Data:

### General

Housing:	Plastic PC-ABS, black
Dimensions:	Height 117 mm, Width 57 mm, Depth 29 mm
Weight:	160 g (5.6 oz)
Connection:	4-wire halogen free PEIGUM® spiral cable, 2 Wires shielded, Draw length max. 1.5 m, without connector
Operating and display elements:	1 Button, red
Storage temperature:	-40 °C to +70 °C (-40 °F to +158 °F)
Operation temperature:	-25 °C to +60 °C (-13 °F to +140 °F)

### Microphone

Frequency range:	180 Hz to 6 kHz at -10 dB
Sensitivity:	2 mV/Pa (-54 dBV/Pa ± 3 dB)
Impedance:	300 Ω ± 20 % at 1 kHz
Directivity:	Omnidirectional

# DD60

Electret hand  
microphone  
with one button

Article-No.:  
**2204-011-000-51**



## Product:

### Characteristics

- Electret microphone capsule
- Unidirectional noise canceling
- Rugged plastic housing
- Durable PEIGUM® spiral cable
- Easy to operate push to talk button

### Options

- Level control
- Customized plugs and cables

### Application range

- Radio and PA systems in mobile applications

### Accessories

- HV7 mount
- HV13 mount
- HV21 mount

### Scope of delivery

- Hand microphone with PEIGUM® spiral cable
- HV7 mount

## Technical Data:

### General

Housing:	Plastic PC-ABS, black
Dimensions:	Height 117 mm, Width 57 mm, Depth 29 mm
Weight:	150 g (5.3 oz)
Connection:	4-wire halogen free PEIGUM® spiral cable, 2 Wires shielded, Draw length max. 1.5 m, without connector
Operating and display elements:	1 Button, red
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-25 °C to +60 °C (-13 °F to +140 °F)

### Microphone

Operating voltage:	1.5 V to 10 V
Frequency range:	100 Hz to 14 kHz at -10 dB
Sensitivity:	6 mV/Pa (-44 dBV/Pa ± 3 dB) at 5 V/2 kΩ
Impedance:	1.6 kΩ ± 20 % at 1 kHz/R <sub>L</sub> = 2 kΩ
Directivity:	Cardioid (at 1 kHz; 180° -15 dB)

**DD112**

**Dynamic hand  
microphone  
with one button**

Article-No.:  
**2208-002-000-02**

**Product:****Characteristics**

- Dynamic microphone capsule
- Rugged chromed housing
- Durable PEIGUM® spiral cable
- Very long life switching contact

**Options**

- Splash protection for microphone capsule
- Protection against unintentional button presses
- Customized plugs and cables
- Special button colors or symbol
- Black matte housing

**Application range**

- Radio and PA systems in mobile and fixed applications

**Accessories**

- HV5 mount
- Rubber protective ring for microphone head
- Microphone preamplifier V966, V967, V856 and V857

**Scope of delivery**

- Hand microphone with PEIGUM® spiral cable

**Technical Data:****General**

Housing:	Brass, brushed chrome
Dimensions:	Length 142 mm, Head Ø 29 mm, Body Ø 24 mm
Weight:	210 g (7.4 oz)
Connection:	4-wire halogen free PEIGUM® spiral cable, 2 Wires shielded, Draw length max. 1.5 m, without connector
Operating and display elements:	1 Button, black
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-20 °C to +60 °C (-4 °F to +140 °F)

**Microphone**

Frequency range:	150 Hz to 4 kHz at -10 dB
Sensitivity:	2 mV/Pa (-54 dBV/Pa ± 3 dB)
Impedance:	200 Ω ± 20 % at 1 kHz
Directivity:	Omnidirectional



# DD112

**Dynamic hand  
microphone  
with two buttons**

Article-No.:  
**2208-013-000-02**



## Product:

### Characteristics

- Dynamic microphone capsule
- Rugged chromed housing
- Durable PEIGUM® spiral cable
- Very long life switching contacts

### Options

- Splash protection for microphone capsule
- Protection against unintentional button presses
- Customized plugs and cables
- Special button colors or symbols
- Black matte housing

### Application range

- Radio and PA systems in mobile and fixed applications

### Accessories

- HV5 mount
- Rubber protective ring for microphone head
- Microphone preamplifier V966, V967, V856 and V857

### Scope of delivery

- Hand microphone with PEIGUM® spiral cable

## Technical Data:

### General

Housing:	Brass, brushed chrome
Dimensions:	Length 173 mm, Head Ø 29 mm, Body Ø 24 mm
Weight:	245 g (8.6 oz)
Connection:	6-wire halogen free PEIGUM® spiral cable, 2 Wires shielded, Draw length max. 1.5 m, without connector
Operating and display elements:	2 Buttons, orange, black
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-20 °C to +60 °C (-4 °F to +140 °F)

### Microphone

Frequency range:	150 Hz to 4 kHz at -10 dB
Sensitivity:	2 mV/Pa (-54 dBV/Pa ± 3 dB)
Impedance:	200 Ω ± 20 % at 1 kHz
Directivity:	Omnidirectional

# DD113

**Waterproofed,  
dynamic  
hand microphone  
with one button**

Article-No.:  
**2208-035-000-03**



## Product:

### Characteristics

- Waterproofed IP6K8
- Dynamic microphone capsule
- Rugged chromed housing
- Durable PEIGUM® spiral cable
- Protection against unintentional button presses
- Very long life switching contact

### Options

- Microphone preamplifier V966, V967, V856 and V857
- Customized plugs and cables
- Special button colors or symbols
- Black matte housing

### Application range

- Radio and PA systems for mobile and fixed applications in harsh environmental conditions

### Accessories

- HV5 mount
- Rubber protective ring for microphone head

### Scope of delivery

- Hand microphone with PEIGUM® spiral cable
- Rubber protective ring for microphone head

## Technical Data:

### General

Housing:	Brass, sand blasted chrome (matte)
Dimensions:	Length 146 mm, Head Ø 33 mm, Body Ø 24 mm
Weight:	275 g (9.7 oz)
Connection:	4-wire halogen free PEIGUM® spiral cable, 2 Wires shielded, Draw length max. 2.5 m, without connector
Operating and display elements:	1 Button, black
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-20 °C to +60 °C (-4 °F to +140 °F)

### Microphone

Frequency range:	700 Hz to 4 kHz at -10 dB
Sensitivity:	4 mV/Pa (-48 dBV/Pa ± 3 dB)
Impedance:	200 Ω ± 20 % at 1 kHz
Directivity:	Omnidirectional

**DD113**

**Waterproofed,  
dynamic  
hand microphone  
with three buttons**

Article-No.:  
**2208-034-000-03**

**Product:****Characteristics**

- Waterproofed IP6K8
- Dynamic microphone capsule
- Rugged chromed housing
- Durable PEIGUM® spiral cable
- Protection against unintentional button presses
- Very long life switching contacts

**Options**

- Microphone preamplifier V966, V967, V856 and V857
- Customized plugs and cables
- Special button colors or symbols
- Black matte housing

**Application range**

- Radio and PA systems for mobile and fixed applications in harsh environmental conditions

**Accessories**

- HV5 mount
- Rubber protective ring for microphone head

**Scope of delivery**

- Hand microphone with PEIGUM® spiral cable
- Rubber protective ring for microphone head

**Technical Data:****General**

Housing:	Brass, sand blasted chrome (matte)
Dimensions:	Length 177 mm, Head Ø 33 mm, Body Ø 24 mm
Weight:	330 g (11.6 oz)
Connection:	6-wire halogen free PEIGUM® spiral cable, 2 Wires shielded, Draw length max. 2.5 m, without connector
Operating and display elements:	3 Buttons, green, orange, black
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-20 °C to +60 °C (-4 °F to +140 °F)

**Microphone**

Frequency range:	700 Hz to 4 kHz at -10 dB
Sensitivity:	4 mV/Pa (-48 dBV/Pa ± 3 dB)
Impedance:	200 Ω ± 20 % at 1 kHz
Directivity:	Omnidirectional

# ME110

**Electret hand  
microphone  
with one button**

Article-No.:  
**2960-001-000-03**



## Product:

### Characteristics

- Electret microphone capsule
- Unidirectional noise canceling
- Rugged chromed housing
- Durable PEIGUM® spiral cable
- Very long life switching contact

### Options

- Protection against unintentional button presses
- Customized plugs and cables
- Special button colors or symbols
- Black matte housing

### Application range

- Radio and PA systems in mobile and fixed applications
- Specially designed for digital radios

### Accessories

- HV5 mount
- Rubber protective ring for microphone head

### Scope of delivery

- Hand microphone with PEIGUM® spiral cable

## Technical Data:

### General

Housing:	Brass, sand blasted chrome (matte)
Dimensions:	Length 142 mm, Head Ø 29 mm, Body Ø 24 mm
Weight:	190 g (6.7 oz)
Connection:	4-wire halogen free PEIGUM® spiral cable, 2 Wires shielded, Draw length max. 1.5 m, without connector
Operating and display elements:	1 Button, yellow
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-25 °C to +60 °C (-13 °F to +140 °F)

### Microphone

Operating voltage:	1.5 V to 10 V
Frequency range:	100 Hz to 8 kHz at -10 dB
Sensitivity:	24 mV/Pa (-32 dBV/Pa ± 3 dB) at 3 V/2.2 kΩ
Impedance:	1.9 kΩ ± 20 % at 1 kHz/R <sub>L</sub> = 2.2 kΩ
Directivity:	Cardioid (at 1 kHz; 180° -15 dB)

# ME110

**Electret hand  
microphone  
with two buttons**

Article-No.:  
**2960-005-000-03**



## Product:

### Characteristics

- Electret microphone capsule
- Unidirectional noise canceling
- Rugged chromed housing
- Durable PEIGUM® spiral cable
- Very long life switching contacts

### Options

- Protection against unintentional button presses
- Push-button switch
- Customized plugs and cables
- Special button colors or symbols
- Black matte housing

### Application range

- Radio and PA systems in mobile and fixed applications
- Specially designed for digital radios

### Accessories

- HV5 mount
- Rubber protective ring for microphone head

### Scope of delivery

- Hand microphone with PEIGUM® spiral cable

## Technical Data:

### General

Housing:	Brass, sand blasted chrome (matte)
Dimensions:	Length 173 mm, Head Ø 29 mm, Body Ø 24 mm
Weight:	215 g (7.6 oz)
Connection:	6-wire halogen free PEIGUM® spiral cable, 2 Wires shielded, Draw length max. 1,5 m, without connector
Operating and display elements:	2 Buttons, yellow, blue
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-25 °C to +60 °C (-13 °F to +140 °F)

### Microphone

Operating voltage:	1.5 V to 10 V
Frequency range:	100 Hz to 8 kHz at -10 dB
Sensitivity:	24 mV/Pa (-32 dBV/Pa ± 3 dB) at 3 V/2.2 kΩ
Impedance:	1.9 kΩ ± 20 % at 1 kHz/R <sub>L</sub> = 2.2 kΩ
Directivity:	Cardioid (at 1 kHz; 180° -15 dB)

# TM67

Dynamic hand  
microphone  
with one button

Article-No.:  
**2102-017-000-03**



## Product:

### Characteristics

- Dynamic microphone capsule
- Unidirectional noise canceling for close talking
- Rubber protective ring for microphone head
- Durable PEIGUM® spiral cable
- Very long life switching contact
- Protection against unintentional button presses

### Options

- Customized plugs and cables
- Special button colors or symbols
- Black matte housing
- Microphone preamplifier V966, V967, V856 and V857

### Application range

- Close talking in air traffic control and control centers

### Accessories

- HV5 mount
- Windscreen WS16

### Scope of delivery

- Hand microphone with PEIGUM® spiral cable
- Rubber protective ring for microphone head

## Technical Data:

### General

Housing:	Brass, sand blasted chrome (matte)
Dimensions:	Length 180 mm, Head Ø 29 mm, Body Ø 24 mm
Weight:	272 g (9.6 oz)
Connection:	4-wire halogen free PEIGUM® spiral cable, 2 Wires shielded, Draw length max. 2 m, without connector
Operating and display elements:	1 Button, orange
Storage temperature:	-25 °C to +70 °C (-13 °F to +158 °F)
Operation temperature:	-20 °C to +60 °C (-4 °F to +140 °F)

### Microphone

Frequency range:	300 Hz to 8 kHz at -10 dB
Sensitivity:	1.5 mV/Pa (-56 dBV/Pa ± 3 dB)
Impedance:	200 Ω ± 20 % at 1 kHz
Directivity:	Cardioid (at 1 kHz; 180° -15 dB)

# TM110

Dynamic hand  
microphone  
with one button

Article-No.:  
**2109-002-000-02**



## Product:

### Characteristics

- Dynamic microphone capsule
- Unidirectional noise canceling
- Rugged chromed housing
- Durable PEIGUM® spiral cable
- Very long life switching contact

### Options

- Protection against unintentional button presses
- Level control
- Push-button switch
- Customized plugs and cables
- Special button colors or symbols
- Black matte housing

### Application range

- Radio systems in mobile and fixed applications

### Accessories

- HV5 mount
- Rubber protective ring for microphone head
- Microphone preamplifier V966, V967, V856 and V857

### Scope of delivery

- Hand microphone with PEIGUM® spiral cable

## Technical Data:

### General

Housing:	Brass, brushed chrome
Dimensions:	Length 142 mm, Head Ø 29 mm, Body Ø 24 mm
Weight:	210 g (7.4 oz)
Connection:	4-wire halogen free PEIGUM® spiral cable, 2 Wires shielded, Draw length max. 1.5 m, without connector
Operating and display elements:	1 Button, black
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-20 °C to +60 °C (-4 °F to +140 °F)

### Microphone

Frequency range:	300 Hz to 6 kHz at -10 dB
Sensitivity:	2 mV/Pa (-54 dBV/Pa ± 3 dB)
Impedance:	200 Ω ± 20 % at 1 kHz
Directivity:	Cardioid (at 1 kHz; 180° -15 dB)

# TM110

Dynamic hand  
microphone  
with two buttons

Article-No.:  
**2109-041-000-02**



## Product:

### Characteristics

- Dynamic microphone capsule
- Unidirectional noise canceling
- Rugged chromed housing
- Durable PEIGUM® spiral cable
- Very long life switching contacts

### Options

- Protection against unintentional button presses
- Level control
- Push-button switch
- Customized plugs and cables
- Special button colors or symbols
- Black matte housing

### Application range

- Radio systems in mobile and fixed applications

### Accessories

- HV5 mount
- Rubber protective ring for microphone head
- Microphone preamplifier V966, V967, V856 and V857

### Scope of delivery

- Hand microphone with PEIGUM® spiral cable

## Technical Data:

### General

Housing:	Brass, brushed chrome
Dimensions:	Length 173 mm, Head Ø 29 mm, Body Ø 24 mm
Weight:	245 g (8.6 oz)
Connection:	6-wire halogen free PEIGUM® spiral cable, 2 Wires shielded, Draw length max. 1.5 m, without connector
Operating and display elements:	2 Buttons, orange, black
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-20 °C to +60 °C (-4 °F to +140 °F)

### Microphone

Frequency range:	300 Hz to 6 kHz at -10 dB
Sensitivity:	2 mV/Pa (-54 dBV/Pa ± 3 dB)
Impedance:	200 Ω ± 20 % at 1 kHz
Directivity:	Cardioid (at 1 kHz; 180° -15 dB)



# TM110

**Dynamic hand  
microphone  
with three buttons**

Article-No.:  
**2109-052-000-02**



## Product:

### Characteristics

- Dynamic microphone capsule
- Unidirectional noise canceling
- Rugged chromed housing
- Durable PEIGUM® spiral cable
- Very long life switching contacts

### Options

- Protection against unintentional button presses
- Level control
- Push-button switch
- Customized plugs and cables
- Special button colors or symbols
- Black matte housing

### Application range

- Radio systems in mobile and fixed applications

### Accessories

- HV5 mount
- Rubber protective ring for microphone head
- Microphone preamplifier V966, V967, V856 and V857

### Scope of delivery

- Hand microphone with PEIGUM® spiral cable

## Technical Data:

### General

Housing:	Brass, brushed chrome
Dimensions:	Length 173 mm, Head Ø 29 mm, Body Ø 24 mm
Weight:	245 g (8.6 oz)
Connection:	6-wire halogen free PEIGUM® spiral cable, 2 Wires shielded, Draw length max. 1.5 m, without connector
Operating and display elements:	3 Buttons, black, orange, green
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-20 °C to +60 °C (-4 °F to +140 °F)

### Microphone

Frequency range:	300 Hz to 6 kHz at -10 dB
Sensitivity:	2 mV/Pa (-54 dBV/Pa ± 3 dB)
Impedance:	200 Ω ± 20 % at 1 kHz
Directivity:	Cardioid (at 1 kHz; 180° -15 dB)

# TM210

Dynamic hand  
microphone  
with one button

Article-No.:  
**2113-001-000-03**



## Product:

### Characteristics

- Dynamic microphone capsule
- Unidirectional noise canceling
- Rugged chromed housing
- Durable PEIGUM® spiral cable
- Very long life switching contact

### Options

- Protection against unintentional button presses
- Customized plugs and cables
- Special button colors or symbols
- Black matte housing

### Application range

- Radio and PA systems in mobile and fixed applications

### Accessories

- HV5 mount
- Windscreen WS16
- Microphone preamplifier V966, V967, V856 and V857

### Scope of delivery

- Hand microphone with PEIGUM® spiral cable

## Technical Data:

### General

Housing:	Brass, sand blasted chrome (matte)
Dimensions:	Length 178 mm, Ø 24 mm
Weight:	215 g (7.6 oz)
Connection:	4-wire halogen free PEIGUM® spiral cable, 2 Wires shielded, Draw length max. 1.5 m, without connector
Operating and display elements:	1 Button, black
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-20 °C to +60 °C (-4 °F to +140 °F)

### Microphone

Frequency range:	150 Hz to 12 kHz at -10 dB
Sensitivity:	1 mV/Pa (-60 dBV/Pa ± 3 dB)
Impedance:	200 Ω ± 20 % at 1 kHz
Directivity:	Cardioid (at 1 kHz; 180° -20 dB)

# TM210

Dynamic hand  
microphone  
with two buttons

Article-No.:  
**2113-004-000-03**



## Product:

### Characteristics

- Dynamic microphone capsule
- Unidirectional noise canceling
- Rugged chromed housing
- Durable PEIGUM® spiral cable
- Very long life switching contacts

### Options

- Protection against unintentional button presses
- Customized plugs and cables
- Special button colors or symbols
- Black matte housing

### Application range

- Radio and PA systems in mobile and fixed applications

### Accessories

- HV5 mount
- Windscreen WS16
- Microphone preamplifier V966, V967, V856 and V857

### Scope of delivery

- Hand microphone with PEIGUM® spiral cable

## Technical Data:

### General

Housing:	Brass, sand blasted chrome (matte)
Dimensions:	Length 178 mm, Ø 24 mm
Weight:	230 g (8.1 oz)
Connection:	6-wire halogen free PEIGUM® spiral cable, 2 Wires shielded, Draw length max. 1.5 m, without connector
Operating and display elements:	2 Buttons, orange, black
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-20 °C to +60 °C (-4 °F to +140 °F)

### Microphone

Frequency range:	150 Hz to 12 kHz at -10 dB
Sensitivity:	1 mV/Pa (-60 dBV/Pa ± 3 dB)
Impedance:	200 Ω ± 20 % at 1 kHz
Directivity:	Cardioid (at 1 kHz; 180° -20 dB)

# TM214

**Dynamic hand  
microphone  
with one button  
and volume control**

Article-No.:  
**2113-008-000-03**



## Product:

### Characteristics

- Dynamic microphone capsule
- Unidirectional noise canceling
- Volume control
- Rugged chromed housing
- Durable PEIGUM® spiral cable
- Very long life switching contact

### Options

- Protection against unintentional button presses
- Push-button switch
- Customized plugs and cables
- Special button colors or symbols
- Black matte housing

### Application range

- Radio and PA systems in mobile and stationary applications

### Accessories

- HV5 mount
- Windscreen WS16
- Microphone preamplifier V966, V967, V856 and V857

### Scope of delivery

- Hand microphone with PEIGUM® spiral cable

## Technical Data:

### General

Housing:	Brass, sand blasted chrome (matte)
Dimensions:	Length 178 mm, Ø 24 mm
Weight:	220 g (7.7 oz)
Connection:	4-wire halogen free PEIGUM® spiral cable, 2 Wires shielded, Draw length max. 1.5 m, without connector
Operating and display elements:	1 Button, black 1 Volume control, black
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-20 °C to +60 °C (-4 °F to +140 °F)

### Microphone

Frequency range:	150 Hz to 12 kHz at -10 dB
Sensitivity:	1 mV/Pa (-60 dBV/Pa ± 3 dB)
Impedance:	200 Ω ± 20 % at 1 kHz
Directivity:	Cardioid (at 1 kHz; 180° -20 dB)

# DD169

## Dynamic microphone head

Article-No.:  
**2211-005-000-03**



### Product:

#### Characteristics

- Dynamic microphone capsule
- Splash protection
- Rugged chromed housing
- Designed for gooseneck mounting

#### Options

- Microphone preamplifier
- Black matte housing
- Mounted on gooseneck

#### Application range

- Radio and PA systems in mobile outdoor applications

#### Accessories

- Various goosenecks and mounting brackets

#### Scope of delivery

- Microphone head with cable

### Technical Data:

#### General

Housing:	Brass, sand blasted chrome (matte)
Dimensions:	Length 75 mm, Ø 29 mm
Weight:	150 g (5.3 oz)
Connection:	2-wire cable shielded, 1.8 m, without connector
Storage temperature:	-25 °C to +70 °C (-13 °F to +158 °F)
Operation temperature:	-20 °C to +60 °C (-4 °F to +140 °F)

#### Microphone

Frequency range:	500 Hz to 4 kHz at -10 dB
Sensitivity:	2 mV/Pa (-54 dBV/Pa ± 3 dB)
Impedance:	200 Ω ± 20 % at 1 kHz
Directivity:	Omnidirectional

# TM85

## Dynamic microphone head

Article-No.:  
**2106-001-000-03**



### Product:

#### Characteristics

- Dynamic microphone capsule
- Unidirectional noise canceling
- Chromed housing
- For front cover mounting on desktop systems
- Protected against metal dust (INTERCEPT) and splashed water
- Unsuitable for gooseneck mounting

#### Options

- Black matte housing

#### Application range

- PA systems in fixed applications

#### Accessories

- HF2 or HF3 mount

#### Scope of delivery

- Microphone head with cable

### Technical Data:

#### General

Housing:	Brass, sand blasted chrome (matte)
Dimensions:	Length 49 mm, Ø 29 mm
Weight:	65 g (2.3 oz)
Connection:	3 wires, Length 80 mm, without connector
Storage temperature:	-25 °C to +70 °C (-13 °F to +158 °F)
Operation temperature:	-20 °C to +60 °C (-4 °F to +140 °F)

#### Microphone

Frequency range:	300 Hz to 8 kHz at -10 dB
Sensitivity:	1.5 mV/Pa (-56 dBV/Pa ± 3 dB)
Impedance:	200 Ω ± 20 % at 1 kHz
Directivity:	Cardioid (at 1 kHz; 180° -15 dB)

# TM168

Dynamic  
microphone head

Article-No.:  
**2111-001-000-03**



## Product:

### Characteristics

- Dynamic microphone capsule
- Unidirectional high noise canceling
- Chromed housing
- Designed for gooseneck mounting

### Options

- Microphone preamplifier
- Black matte housing
- Mounted on gooseneck

### Application range

- Desktop microphones in indoor applications

### Accessories

- Various goosenecks and mounting brackets
- Windscreen WS16
- Microphone preamplifier V966, V967, V856 and V857

### Scope of delivery

- Microphone head with cable

## Technical Data:

### General

Housing:	Brass, sand blasted chrome (matte)
Dimensions:	Length 80 mm, Ø 24 mm
Weight:	120 g (4.2 oz)
Connection:	2-wire cable shielded, 1.8 m, without connector
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-20 °C to +60 °C (-4 °F to +140 °F)

### Microphone

Frequency range:	150 Hz to 12 kHz at -10 dB
Sensitivity:	1 mV/Pa (-60 dBV/Pa ± 3 dB)
Impedance:	200 Ω ± 20 % at 1 kHz
Directivity:	Cardioid (at 1 kHz; 180° -20 dB)

# TM169

## Dynamic microphone head

Article-No.:  
**2112-001-000-03**



### Product:

#### Characteristics

- Dynamic microphone capsule
- Unidirectional noise canceling
- Chromed housing
- Designed for gooseneck mounting

#### Options

- Microphone preamplifier
- Black matte housing
- Mounted on gooseneck

#### Application range

- Radio and PA systems in mobile and fixed applications

#### Accessories

- Various goosenecks and mounting brackets
- Microphone preamplifier V966, V967, V856 and V857

#### Scope of delivery

- Microphone head with cable

### Technical Data:

#### General

Housing:	Brass, sand blasted chrome (matte)
Dimensions:	Length 73.5 mm, Ø 29 mm
Weight:	140 g (4.9 oz)
Connection:	2-wire cable shielded, 1.8 m, without connector
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-20 °C to +60 °C (-4 °F to +140 °F)

#### Microphone

Frequency range:	50 Hz to 14 kHz at -10 dB
Sensitivity:	1.5 mV/Pa (-56 dBV/Pa ± 3 dB)
Impedance:	200 Ω ± 20 % at 1 kHz
Directivity:	Cardioid (at 1 kHz; 180° -15 dB)



# TM170

## Dynamic microphone head

Article-No.:  
**2117-001-000-03**



### Product:

#### Characteristics

- Dynamic microphone capsule
- Unidirectional high noise canceling
- Chromed housing
- Designed for gooseneck mounting

#### Options

- Black matte housing
- Mounted on gooseneck

#### Application range

- Desktop microphones in indoor applications

#### Accessories

- Various goosenecks and mounting brackets
- Windscreen WS16

#### Scope of delivery

- Microphone head with cable

### Technical Data:

#### General

Housing:	Brass, sand blasted chrome (matte)
Dimensions:	Length 50 mm, Ø 24 mm
Weight:	70 g (2.4 oz)
Connection:	2-wire cable shielded, 1.8 m, without connector
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-20 °C to +60 °C (-4 °F to +140 °F)

#### Microphone

Frequency range:	150 Hz to 12 kHz at -10 dB
Sensitivity:	1 mV/Pa (-60 dBV/Pa ± 3 dB)
Impedance:	200 Ω ± 20 % at 1 kHz
Directivity:	Cardioid (at 1 kHz; 180° -20 dB)

# TM660

## Dynamic microphone head

Article-No.:  
**2114-001-000-03**



### Product:

#### Characteristics

- Dynamic microphone capsule
- Unidirectional noise canceling
- Chromed housing
- Designed for gooseneck mounting

#### Options

- Microphone preamplifier
- Black matte housing
- Mounted on gooseneck

#### Application range

- Radio and PA systems in mobile applications
- Designed for use in large vehicles

#### Accessories

- Various goosenecks and mounting brackets
- Microphone preamplifier V966, V967, V856 and V857

#### Scope of delivery

- Microphone head with cable

### Technical Data:

#### General

Housing:	Brass, sand blasted chrome (matte)
Dimensions:	Length 85 mm, Ø 29 mm
Weight:	160 g (5.6 oz)
Connection:	2-wire cable shielded, 1.8 m, without connector
Storage temperature:	-25 °C to +70 °C (-13 °F to +158 °F)
Operation temperature:	-20 °C to +60 °C (-4 °F to +140 °F)

#### Microphone

Frequency range:	300 Hz to 8 kHz at -10 dB
Sensitivity:	1,5 mV/Pa (-56 dBV/Pa ± 3 dB)
Impedance:	200 Ω ± 20 % at 1 kHz
Directivity:	Cardioid (at 1 kHz; 180° -15 dB)

# TM810

## Dynamic microphone head

Article-No.:  
**2115-001-000-03**



### Product:

#### Characteristics

- Dynamic microphone capsule
- Unidirectional noise canceling
- Rugged chromed housing
- Designed for gooseneck mounting
- Protected against metal dust (INTERCEPT) and splashed water

#### Options

- Various microphone preamplifiers
- Black matte housing
- Mounted on gooseneck

#### Application range

- Radio and PA systems in mobile applications
- Designed for use in railway and industrial systems

#### Accessories

- Various goosenecks and mounting brackets
- Microphone preamplifier V966, V967, V856 and V857

#### Scope of delivery

- Microphone head with cable

### Technical Data:

#### General

Housing:	Brass, sand blasted chrome (matte)
Dimensions:	Length 85 mm, Ø 29 mm
Weight:	160 g (5.6 oz)
Connection:	2-wire cable shielded, 1.8 m, without connector
Storage temperature:	-25 °C to +70 °C (-13 °F to +158 °F)
Operation temperature:	-20 °C to +60 °C (-4 °F to +140 °F)

#### Microphone

Frequency range:	300 Hz to 8 kHz at -10 dB
Sensitivity:	1.5 mV/Pa (-56 dBV/Pa ± 3 dB)
Impedance:	200 Ω ± 20 % at 1 kHz
Directivity:	Cardioid (at 1 kHz; 180° -15 dB)

# TM2000

Dynamic twin  
microphone head

Article-No.:  
**2116-001-000-03**



## Product:

### Characteristics

- Two independent dynamic microphone capsules
- Unidirectional high noise canceling
- Chromed housing
- Designed for gooseneck mounting

### Options

- Microphone preamplifier (max. 1 piece)
- Black matte housing
- Mounted on gooseneck

### Application range

- Radio and PA systems in mobile applications
- Designed for use in large vehicles

### Accessories

- Various goosenecks and mounting brackets

### Scope of delivery

- Microphone head with cable

## Technical Data:

### General

Housing:	Brass, sand blasted chrome (matte)
Dimensions:	Length 124 mm, Ø 24 mm
Weight:	160 g (5.6 oz)
Connection:	2x 2-wire cable shielded, per 1.5 m, without connector
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-20 °C to +60 °C (-4 °F to +140 °F)

### Microphone 1

Frequency range:	150 Hz to 12 kHz at -10 dB
Sensitivity:	1 mV/Pa (-60 dBV/Pa ± 3 dB)
Impedance:	200 Ω ± 20 % at 1 kHz
Directivity:	Cardioid (at 1 kHz; 180° -20 dB)

### Microphone 2

Frequency range:	150 Hz to 12 kHz at -10 dB
Sensitivity:	1 mV/Pa (-60 dBV/Pa ± 3 dB)
Impedance:	200 Ω ± 20 % at 1 kHz
Directivity:	Cardioid (at 1 kHz; 180° -20 dB)

# ME14

## Electret gooseneck microphone

Article-No.:  
**2918-001-000-51**



### Product:

#### Characteristics

- Electret microphone capsule
- Full metal housing with gooseneck
- Covered with heat shrink tube
- Protected against dust and splashed water (IP54)

#### Options

- Customized plugs and cables
- Various lengths of goosenecks
- Microphone preamplifier

#### Application range

- Radio and PA systems in mobile outdoor applications e.g. vehicles and motorbikes

#### Accessories

- Various mounting brackets for M10 screw thread

#### Scope of delivery

- Gooseneck microphone with cable

### Technical Data:

#### General

Housing:	Brass, black - heat shrink tube
Gooseneck:	Steel coil with external brass winding, black - heat shrink tube
Dimensions:	Length 234 mm, Head Ø 16 mm, Gooseneck Ø 10 mm
Weight:	130 g (4.6 oz)
Connection:	1-wire cable, shielded, 2.8 m, without connector
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-25 °C to +60 °C (-13 °F to +140 °F)

#### Microphone

Operating voltage (DC):	1.5 V to 10 V
Frequency range:	50 Hz to 9 kHz at -10 dB
Sensitivity:	14 mV/Pa (-37 dBV/Pa ± 3 dB) at 5 V/2 kΩ
Impedance:	1.5 kΩ ± 20 % at 1 kHz/R <sub>L</sub> = 2 kΩ
Directivity:	Omnidirectional

# ME110 SH

**Electret  
gooseneck microphone  
with push button**

**Article-No.:  
2960-003-000-05**



## Product:

### Characteristics

- Electret microphone capsule
- Unidirectional noise canceling
- Rugged housing with gooseneck
- Very long life switching contact

### Options

- Protection against unintentional button presses
- Push-button switch
- Customized plugs and cables
- Special button colors or symbols
- Various lengths of goosenecks

### Application range

- Radio and PA systems in mobile and fixed applications
- Designed for digital radios

### Accessories

- Various mounting brackets for M10 screw thread
- Rubber protective ring for microphone head

### Scope of delivery

- Gooseneck microphone with cable

## Technical Data:

### General

Housing:	Brass , matte black plasma coated
Gooseneck:	Steel coil with external brass winding, black
Dimensions:	Length 650 mm, Head Ø 29 mm, Body Ø 24 mm Gooseneck Ø 15 mm
Weight:	625 g (22 oz)
Connection:	4-wires cable, 2 Wires shielded, 4 m, without connector
Operating and display elements:	1 Button, yellow
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-25 °C to +60 °C (-13 °F to +140 °F)

### Microphone

Operating voltage (DC):	1.5 V to 10 V
Frequency range:	100 Hz to 8 kHz at -10 dB
Sensitivity:	24 mV/Pa (-32 dBV/Pa ± 3 dB) at 3 V/2.2 kΩ
Impedance:	1.9 kΩ ± 20 % at 1 kHz/RL = 2.2 kΩ
Directivity:	Cardioid (at 1 kHz; 180° -15 dB)

# ME151

## Electret gooseneck microphone

Article-No.:  
**2910-006-000-51**



### Product:

#### Characteristics

- Electret microphone capsule (High Level)
- Unidirectional noise canceling
- Solid plastic housing with gooseneck
- Covered with heat shrink tube
- Protected against dust and splashed water (IP54)

#### Options

- Customized plugs and cables
- Various lengths of goosenecks
- Microphone sensitivity 6 mV (Low Level)

#### Application range

- Radio and PA systems in mobile and fixed applications

#### Accessories

- Various mounting brackets for M10 screw thread
- Windscreen WS18 or WS19

#### Scope of delivery

- Gooseneck microphone with cable

### Technical Data:

#### General

Housing:	Plastic PE, black
Gooseneck:	Steel coil with external brass winding, black
Dimensions:	Length 215 mm, Head Ø 13 mm, Gooseneck Ø 8 mm
Weight:	100 g (3.5 oz)
Connection:	1-wire cable, shielded, 3.3 m, without connector
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-25 °C to +60 °C (-13 °F to +140 °F)

#### Microphone

Operating voltage (DC):	1.5 V to 10 V
Frequency range:	100 Hz to 14 kHz at -10 dB
Sensitivity:	12 mV/Pa (-38 dBV/Pa ± 3 dB) at 5 V/2 kΩ
Impedance:	1.6 kΩ ± 20 % at 1 kHz/R <sub>L</sub> = 2 kΩ
Directivity:	Cardioid (at 1 kHz; 180° -15 dB)

# ME251

## Electret gooseneck microphone

Article-No.:  
**2908-030-000-51**



### Product:

#### Characteristics

- Electret microphone capsule
- Unidirectional noise canceling
- Solid plastic housing with gooseneck
- Adjustable microphone preamplifier

#### Options

- Customized plugs and cables
- Various lengths of goosenecks
- Ground free version (ME253) without microphone preamplifier

#### Application range

- Radio and PA systems in mobile and fixed applications

#### Accessories

- Various mounting brackets for M10 screw thread
- Windscreen WS18

#### Scope of delivery

- Gooseneck microphone with cable
- Windscreen

### Technical Data:

#### General

Housing:	Plastic PC-ABS, black
Gooseneck:	Steel coil with external brass winding, black
Dimensions:	Length 235 mm, Head Ø 12 mm, Gooseneck Ø 8 mm
Weight:	95 g (3.3 oz)
Connection:	1-wire cable, shielded, 2.5 m, without connector
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-25 °C to +60 °C (-13 °F to +140 °F)

#### Microphone

Operating voltage (DC):	9 V to 13.5 V
Frequency range:	100 Hz to 10 kHz at -10 dB
Sensitivity:	700 mV/Pa (-3 dBV/Pa ± 3 dB) at 9.5 V/1 kΩ
Impedance:	1 kΩ ± 20 % at 1 kHz/R <sub>L</sub> = 1 kΩ
Directivity:	Cardioid (at 1 kHz; 180° -15 dB)



# ME351

## Electret gooseneck microphone

Article-No.:  
**2906-002-000-51**



### Product:

#### Characteristics

- Electret microphone capsule
- Unidirectional noise canceling
- Solid plastic housing with gooseneck
- Integrated windscreen

#### Options

- Customized plugs and cables
- Various lengths of goosenecks

#### Application range

- Radio and PA systems in mobile and fixed applications

#### Accessories

- Various mounting brackets for M10 screw thread
- Windscreen WS18

#### Scope of delivery

- Gooseneck microphone with cable

### Technical Data:

#### General

Housing:	Plastic PC-ABS, black
Gooseneck:	Steel coil with external brass winding, black
Dimensions:	Length 233 mm, Head Ø 12 mm, Gooseneck Ø 8 mm
Weight:	85 g (3.0 oz)
Connection:	1-wire cable, shielded, 1.8 m, without connector
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-25 °C to +60 °C (-13 °F to +140 °F)

#### Microphone

Operating voltage (DC):	1.5 V to 9 V
Frequency range:	75 Hz to 18 kHz at -10 dB
Sensitivity:	8 mV/Pa (-42 dBV/Pa ± 3 dB) at 5 V/2 kΩ
Impedance:	1.6 kΩ ± 20 % at 1 kHz/R <sub>L</sub> = 2 kΩ
Directivity:	Cardioid (at 1 kHz; 180° -15 dB)

# ME352

**Electret  
gooseneck microphone  
with LED ring**

Article-No.:  
**2904-007-000-51**



## Product:

### Characteristics

- Electret microphone capsule
- Unidirectional noise canceling
- Solid plastic housing with gooseneck
- Integrated windscreen
- LED ring

### Options

- Customized plugs and cables
- Various lengths of goosenecks

### Application range

- Radio and PA systems in fixed applications

### Accessories

- Various mounting brackets for M10 screw thread
- Windscreen WS17

### Scope of delivery

- Gooseneck microphone with cable

## Technical Data:

### General

Housing:	Plastic PC-ABS, black
Gooseneck:	Steel coil with external brass winding, black
Dimensions:	Length 335 mm, Head Ø 15 mm, Gooseneck Ø 10 mm
Weight:	110 g (3.9 oz)
Connection:	3-wires cable, shielded, 0.5 m, without connector
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-25 °C to +60 °C (-13 °F to +140 °F)

### Microphone

Operating voltage (DC):	1.5 V to 9 V
Frequency range:	100 Hz to 12 kHz at -10 dB
Sensitivity:	8 mV/Pa (-42 dBV/Pa ± 3 dB) at 5 V/2 kΩ
Impedance:	1.6 kΩ ± 20 % at 1 kHz/R <sub>L</sub> = 2 kΩ
Directivity:	Cardioid (at 1 kHz; 180° -15 dB)

### LED

Nominal current:	20 mA
Illuminance:	140 mcd
Series resistor:	Must be connected externally

# ME353

## Electret gooseneck microphone

Article-No.:  
**2942-004-000-51**



### Product:

#### Characteristics

- Electret microphone capsule
- Bidirectional microphone for close talking
- Solid plastic housing with gooseneck
- Gooseneck wrapped with heat shrink tube

#### Options

- Customized plugs and cables
- Various lengths of goosenecks

#### Application range

- Radio and PA systems in fixed applications

#### Accessories

- Various mounting brackets for M10 screw thread
- Windscreen WS17

#### Scope of delivery

- Gooseneck microphone with cable
- Windscreen WS17

### Technical Data:

#### General

Housing:	Plastic PC-ABS, black
Gooseneck:	Steel coil with external brass winding, black - heat shrink tube
Dimensions:	Length 445 mm, Head Ø 13 mm, Gooseneck Ø 6 mm
Weight:	70 g (2.4 oz)
Connection:	1-wire cable, shielded, 1 m, without connector
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-25 °C to +60 °C (-13 °F to +140 °F)

#### Microphone

Operating voltage (DC):	1.5 V to 10 V
Frequency range:	100 Hz to 18 kHz at -10 dB
Sensitivity:	5 mV/Pa (-46 dBV/Pa ± 3 dB) at 5 V/2 kΩ
Impedance:	1.6 kΩ ± 20 % at 1 kHz/R <sub>L</sub> = 2 kΩ
Directivity:	Bidirectional (at 1 kHz; ≥ -14 dB at 50 cm)

# TM110 SH

**Dynamic  
gooseneck microphone  
with one button**

Article-No.:  
**2109-240-000-05**



## Product:

### Characteristics

- Dynamic microphone capsule
- Unidirectional noise canceling
- Rugged housing with gooseneck
- Very long life switching contact

### Options

- Protection against unintentional button presses
- Microphone preamplifier
- Customized plugs and cables
- Special button colors or symbols
- Various lengths of goosenecks

### Application range

- Radio and PA systems in mobile and fixed applications

### Accessories

- Various mounting brackets for M10 screw thread
- Rubber protective ring for microphone head

### Scope of delivery

- Gooseneck microphone with cable

## Technical Data:

### General

Housing:	Brass , matte black plasma coated
Gooseneck:	Steel coil with external brass winding, black
Dimensions:	Length 652 mm, Head Ø 29 mm, Body Ø 24 mm Gooseneck Ø 15 mm
Weight:	640 g (22.6 oz)
Connection:	4-wires cable, 2 Wires shielded, 4 m, without connector
Operating and display elements:	1 Button, orange
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-20 °C to +60 °C (-4 °F to +140 °F)

### Microphone

Frequency range:	300 Hz to 6 kHz at -10 dB
Sensitivity:	2 mV/Pa (-54 dBV/Pa ± 3 dB)
Impedance:	200 Ω ± 20 % at 1 kHz
Directivity:	Cardioid (at 1 kHz; 180° -15 dB)

# TM880 SH

**Dynamic  
gooseneck microphone  
with one button**

Article-No.:  
**2118-001-000-05**



## Product:

### Characteristics

- Dynamic microphone capsule
- Unidirectional high noise canceling
- Rugged housing with gooseneck
- Very long life switching contact
- Protected against metal dust (INTERCEPT) and splashed water

### Options

- Customized plugs and cables
- Special button colors or symbols
- Various lengths of goosenecks
- Microphone preamplifier

### Application range

- Radio and PA systems in mobile applications
- Designed for use on railway and industrial systems

### Accessories

- Various mounting brackets for M14 screw thread

### Scope of delivery

- Gooseneck microphone with cable

## Technical Data:

### General

Housing:	Brass , matte black plasma coated
Gooseneck:	Steel coil with external brass winding, black
Dimensions:	Length 650 mm, Head Ø 29 mm, Body Ø 24 mm Gooseneck Ø 18 mm
Weight:	875 g (30.8 oz)
Connection:	4-wires cable, 2 Wires shielded, 4 m, without connector
Operating and display elements:	1 Button, black
Storage temperature:	-25 °C to +70 °C (-13 °F to +158 °F)
Operation temperature:	-20 °C to +60 °C (-4 °F to +140 °F)

### Microphone

Frequency range:	300 Hz to 8 kHz at -10 dB
Sensitivity:	1.5 mV/Pa (-56 dBV/Pa ± 3 dB)
Impedance:	200 Ω ± 20 % at 1 kHz
Directivity:	Cardioid (at 1 kHz; 180° -15 dB)

## EM7

### Electret surface mount microphone

Article-No.:  
**6801-000-000-51**



### Product:

#### Characteristics

- Electret microphone capsule
- Solid plastic housing
- Microphone preamplifier

#### Options

- Customized plugs and cables
- Dynamic microphone capsule
- Passive version

#### Application range

- For area monitoring and recording systems e.g. air traffic control

#### Scope of delivery

- Microphone with cable
- Mounting hook-and-loop tape

### Technical Data:

#### General

Housing:	Plastic PPO, black
Dimensions:	Height 24 mm, Ø 48 mm
Weight:	220 g (7.7 oz)
Connection:	2-wires cable, shielded, 20 m, without connector
Storage temperature:	-40 °C to +80 °C (-40 °F to +176 °F)
Operation temperature:	-30 °C to +70 °C (-22 °F to +158 °F)

#### Microphone

Operating voltage (DC):	8 V
Frequency range:	120 Hz to 9 kHz at -10 dB
Sensitivity:	500 mV/Pa (-6 dBV/Pa ± 3 dB) at 8 V/680 Ω
Impedance:	100 Ω ± 20 % at 1 kHz/R <sub>L</sub> = 680 Ω
Directivity:	Omnidirectional

## EM14

### Electret built-in microphone

Article-No.:  
**2801-018-001-51**



#### Product:

##### Characteristics

- Electret microphone capsule
- Full metal housing, rubber coated
- Protected against dust and splashed water (IP54)

##### Options

- Customized plugs and cables

##### Application range

- Intercommunication systems in outdoor applications

##### Scope of delivery

- Microphone with cable

#### Technical Data:

##### General

Housing:	Brass, black coated
Dimensions:	Height 35 mm, Ø 22 mm
Weight:	60 g (2.1 oz)
Connection:	1-wire cable, shielded, 3 m, without connector
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-25 °C to +60 °C (-13 °F to +140 °F)

##### Microphone

Operating voltage (DC):	1.5 V to 10 V
Frequency range:	50 Hz to 9 kHz at -10 dB
Sensitivity:	14 mV/Pa (-37 dBV/Pa ± 3 dB) at 5 V/2 kΩ
Impedance:	1.5 kΩ ± 20 % at 1 kHz/R <sub>L</sub> = 2 kΩ
Directivity:	Omnidirectional

**ME1****Electret surface  
mount microphone**

Article-No.:  
**2909-003-000-51**

**Product:****Characteristics**

- Electret microphone capsule (High Level)
- Unidirectional noise canceling
- Solid plastic housing

**Options**

- Customized plugs and cables
- Microphone sensitivity 6 mV (Low Level)

**Application range**

- Hands-free systems in vehicles

**Accessories**

- Windscreen WS19

**Scope of delivery**

- Surface mount microphone with cable
- HV20 mount with hook-and-loop tape
- Windscreen WS19

**Technical Data:****General**

Housing:	Plastic PE, black
Dimensions:	Height 30 mm, Width 17 mm, Depth 32 mm
Weight:	40 g (1.4 oz)
Connection:	1-wire cable, shielded, 3.5 m, without connector
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-25 °C to +60 °C (-13 °F to +140 °F)

**Microphone**

Operating voltage (DC):	1.5 V to 10 V
Frequency range:	100 Hz to 14 kHz at -10 dB
Sensitivity:	12 mV/Pa (-44 dBV/Pa ± 3 dB) at 5 V/2 kΩ
Impedance:	1.6 kΩ ± 20 % at 1 kHz/R <sub>L</sub> = 2 kΩ
Directivity:	Cardioid (at 1 kHz; 180° -15 dB)



# ME2

## Electret surface mount microphone

Article-No.:  
**2907-024-000-51**



### Product:

#### Characteristics

- Electret microphone capsule
- Unidirectional high noise canceling
- Solid plastic housing
- Adjustable microphone preamplifier

#### Options

- Customized plugs and cables

#### Application range

- Hands-free systems

#### Accessories

- Windscreen WS19

#### Scope of delivery

- Surface mount microphone with cable
- HV2 mount with hook-and-loop tape

### Technical Data:

#### General

Housing:	Plastic PC-ABS, black
Dimensions:	Height 40 mm, Width 22 mm, Depth 50 mm
Weight:	45 g (1.6 oz)
Connection:	1-wire cable, shielded, 3.5 m, without connector
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-25 °C to +60 °C (-13 °F to +140 °F)

#### Microphone

Operating voltage (DC):	9 V to 13.5 V
Frequency range:	100 Hz to 10 kHz at -10 dB
Sensitivity:	700 mV/Pa (-3 dBV/Pa ± 3 dB) at 9.5 V/1 kΩ
Impedance:	< 1 kΩ ± 20 % at 1 kHz/R <sub>L</sub> = 1 kΩ
Directivity:	Cardioid (at 1 kHz; 180° -15 dB)

# ME3

## Electret surface mount microphone

Article-No.:  
**2905-003-000-51**



### Product:

#### Characteristics

- Electret microphone capsule
- Unidirectional high noise canceling
- Solid plastic housing
- Integrated windscreen

#### Options

- Customized plugs and cables

#### Application range

- Hands-free systems

#### Accessories

- Windscreen WS19

#### Scope of delivery

- Surface mount microphone with cable
- HV3 mount with hook-and-loop tape (twistable)

### Technical Data:

#### General

Housing:	Plastic PC-ABS, black
Dimensions:	Height 45 mm, Width 22 mm, Depth 55 mm
Weight:	35 g (1.2 oz)
Connection:	1-wire cable, shielded, 2 m, without connector
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-25 °C to +60 °C (-13 °F to +140 °F)

#### Microphone

Operating voltage (DC):	1.5 V to 9 V
Frequency range:	100 Hz to 12 kHz at -10 dB
Sensitivity:	8 mV/Pa (-42 dBV/Pa ± 3 dB) at 5 V/2 kΩ
Impedance:	1.6 kΩ ± 20 % at 1 kHz/R <sub>L</sub> = 2 kΩ
Directivity:	Cardioid (at 1 kHz; 180° -15 dB)

# ME15

## Electret surface mount microphone

Article-No.:  
**2921-034-010-51**



### Product:

#### Characteristics

- Electret microphone capsule
- Unidirectional noise canceling
- Small discrete design
- Microphone preamplifier

#### Options

- Customized plugs and cables
- Passive version

#### Application range

- Hands-free systems

#### Scope of delivery

- Surface mount microphone with cable

### Technical Data:

#### General

Housing:	Plastic PC-ABS, black
Dimensions:	Height 12.3 mm, Width 21.1 mm, Depth 43 mm
Weight:	30 g (1.0 oz)
Connection:	1-wire cable, shielded, 2.3 m, without connector
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-25 °C to +60 °C (-13 °F to +140 °F)

#### Microphone

Operating voltage (DC):	8 V
Frequency range:	80 Hz to 10 kHz at -10 dB
Sensitivity:	700 mV/Pa (-3 dBV/Pa ± 3 dB) at 8 V/680 Ω
Impedance:	< 100 Ω ± 20 % at 1 kHz/R <sub>L</sub> = 680 Ω
Directivity:	Cardioid (at 1 kHz; 180° -15 dB)

# ME17

## Electret snap-in microphone

Article-No.:  
**2923-020-000-51**



### Product:

#### Characteristics

- Electret microphone capsule
- Unidirectional noise canceling
- Solid plastic housing
- Microphone preamplifier

#### Options

- Customized plugs and cables
- Passive version

#### Application range

- Radio and PA systems in mobile and fixed applications

#### Scope of delivery

- Surface mount microphone with cable
- Gasket

### Technical Data:

#### General

Housing:	Plastic PC-ABS, black
Dimensions:	Height 12.7 mm, Width 31.5 mm, Depth 21 mm
Weight:	55 g (1.9 oz)
Connection:	1-wire cable, shielded, 3 m, without connector
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-25 °C to +60 °C (-13 °F to +140 °F)

#### Microphone

Operating voltage (DC):	5 V
Frequency range:	100 Hz to 8 kHz at -10 dB
Sensitivity:	180 mV/Pa (-15 dBV/Pa ± 3 dB) at 5 V/680 Ω
Impedance:	< 1 kΩ ± 20 % at 1 kHz/R <sub>L</sub> = 680 Ω
Directivity:	Cardioid (at 1 kHz; 180° -15 dB)

# ML41

**Electret  
speaker microphone  
with one button**

Article-No.:  
**2319-031-001-51**



## Product:

### Characteristics

- Electret microphone capsule
- Solid plastic housing
- Durable PEIGUM® spiral cable
- Protection against splashed water
- 360° rotating Clip
- 3.5 mm connection for earphones

### Options

- Customized plugs and cables
- Microphone preamplifier
- HV7 mount for vehicles
- LED

### Application range

- Portable radios

### Accessories

- D-Loop earphone with phone plug OBH2
- Acoustical tube earphone with phone plug SSH1

### Scope of delivery

- Speaker microphone with Clip and PEIGUM® spiral cable

## Technical Data:

### General

Housing:	Plastic PC-ABS, black
Dimensions:	Height 84 mm, Width 59 mm, Depth 24 mm
Weight:	140 g (4.9 oz)
Connection:	5-wires halogen free PEIGUM® spiral cable, 1 wire shielded, Draw length max. 1.5 m, without connector
Operating and display elements:	1 Button
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-25 °C to +60 °C (-13 °F to +140 °F)

### Microphone

Operating voltage (DC):	3 V to 10 V
Frequency range:	150 Hz to 10 kHz at -10 dB
Sensitivity:	11 mV/Pa (-39 dBV/Pa ± 3 dB)
Impedance:	1.2 kΩ ± 20 % at 1 kHz
Directivity:	Omnidirectional

### Speaker

Frequency range:	450 Hz to 7 kHz at -10 dB
Effective sound pressure:	77 dB/1 W/1 m ± 3 dB
Impedance:	16 Ω ± 20 % at 1 kHz
Maximum output:	1 W

# ML42

**Electret  
speaker microphone  
with three buttons**

Article-No.:  
**2319-030-001-51**



## Product:

### Characteristics

- Electret microphone capsule
- Solid plastic housing
- Durable PEIGUM® spiral cable
- Protection against splashed water
- 360° rotating Clip
- 3,5 mm connection for earphones

### Options

- Customized plugs and cables
- Microphone preamplifier
- HV7 mount for vehicles
- Volume control
- LED

### Application range

- Portable radios

### Accessories

- D-Loop earphone with phone plug OBH2
- Acoustical tube earphone with phone plug SSH1

### Scope of delivery

- Speaker microphone with Clip and PEIGUM® spiral cable

## Technical Data:

### General

Housing:	Plastic PC-ABS, black
Dimensions:	Height 84 mm, Width 59 mm, Depth 24 mm
Weight:	145 g (5.1 oz)
Connection:	7-wires halogen free PEIGUM® spiral cable, 1 wire shielded, Draw length max. 1.5 m, without connector
Operating and display elements:	3 Buttons
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-25 °C to +60 °C (-13 °F to +140 °F)

### Microphone

Operating voltage (DC):	1.5 V to 10 V
Frequency range:	150 Hz to 10 kHz at -10 dB
Sensitivity:	11 mV/Pa (-39 dBV/Pa ± 3 dB) at 5 V/2.2 kΩ
Impedance:	1.2 kΩ ± 20 % at 1 kHz/R <sub>L</sub> = 2.2 kΩ
Directivity:	Omnidirectional

### Speaker

Frequency range:	450 Hz to 7 kHz at -10 dB
Effective sound pressure:	77 dB/1 W/1 m ± 3 dB
Impedance:	16 Ω ± 20 % at 1 kHz
Maximum output:	1 W

# ML43

**Electret  
speaker microphone  
with two buttons  
and LED**

Article-No.:  
**2319-049-001-51**



## Product:

### Characteristics

- Electret microphone capsule
- Solid plastic housing
- Durable PEIGUM® spiral cable
- Protection against splashed water
- Bracket for mounting in vehicles
- LED (red)

### Options

- Customized plugs and cables
- Microphone preamplifier
- 360° rotating Clip
- Earphone jack

### Application range

- Radio and PA systems in mobile and fixed applications

### Accessories

- HV7 mount
- HV13 mount
- HV21 mount

### Scope of delivery

- Speaker microphone with Clip and PEIGUM® spiral cable
- HV7 mount

## Technical Data:

### General

Housing:	Plastic PC-ABS, black
Dimensions:	Height 84 mm, Width 59 mm, Depth 24 mm
Weight:	130 g (4.6 oz)
Connection:	9-wires halogen free PEIGUM® spiral cable, 1 wire shielded, Draw length max. 1.5 m, without connector
Operating and display elements:	2 Buttons, 1 LED
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-25 °C to +60 °C (-13 °F to +140 °F)

### Microphone

Operating voltage (DC):	12 V
Frequency range:	150 Hz to 10 kHz at -10 dB
Sensitivity:	380 mV/Pa (-8 dBV/Pa ± 3 dB)
Impedance:	< 1 kΩ ± 20 % at 1 kHz
Directivity:	Omnidirectional

### Speaker

Frequency range:	450 Hz to 7 kHz at -10 dB
Effective sound pressure:	77 dB/1 W/1 m ± 3 dB
Impedance:	16 Ω ± 20 % at 1 kHz
Maximum output:	1 W



# ML70

**Dynamic speaker  
microphone with three  
buttons, volume switch  
and two LEDs**

Article-No.:  
**2307-009-001-51**



## Product:

### Characteristics

- Dynamic microphone capsule
- Solid plastic housing
- Very long life switching contacts
- Bracket for mounting in vehicles

### Options

- Customized plugs and cables
- Special button symbols

### Application range

- Radio and PA systems in mobile applications

### Accessories

- HV7 mount
- HV13 mount
- HV21 mount

### Scope of delivery

- Speaker microphone with spiral cable
- HV7 mount

## Technical Data:

### General

Housing:	Plastic PPO, black
Dimensions:	Height 102.5 mm, Width 50 mm, Depth 26.5 mm
Weight:	250 g (8.8 oz)
Connection:	11-wires spiral cable, 2 wires shielded, Draw length max. 1.5 m, without connector
Operating and display elements:	3 Buttons, 1 volume switch, 2 LEDs
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-20 °C to +60 °C (-4 °F to +140 °F)

### Microphone

Frequency range:	300 Hz to 6 kHz at -10 dB
Sensitivity:	1.8 mV/Pa (-55 dBV/Pa ± 3 dB)
Impedance:	400 Ω ± 20 % at 1 kHz
Directivity:	Omnidirectional

### Speaker

Frequency range:	700 Hz to 6 kHz at -10 dB
Effective sound pressure:	86 dB/1 W/1 m ± 3 dB
Impedance:	4 Ω ± 20 % at 1 kHz
Maximum output:	2 W



# ML71

**Dynamic  
speaker microphone  
with one button**

Article-No.:  
**2308-007-001-51**



## Product:

### Characteristics

- Dynamic microphone capsule
- Solid plastic housing
- Durable PEIGUM® spiral cable
- Very long life switching contacts
- Bracket for mounting in vehicles

### Options

- Customized plugs and cables
- Special button symbols

### Application range

- Radio and PA systems in mobile applications

### Accessories

- HV7 mount
- HV13 mount
- HV21 mount

### Scope of delivery

- Speaker microphone with spiral cable
- HV7 mount

## Technical Data:

### General

Housing:	Plastic PPO, black
Dimensions:	Height 102.5 mm, Width 50 mm, Depth 26.5 mm
Weight:	180 g (6.3 oz)
Connection:	6-wires halogen free PEIGUM® spiral cable, 2 wires shielded, Draw length max. 1.5 m, without connector
Operating and display elements:	1 Button
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-20 °C to +60 °C (-4 °F to +140 °F)

### Microphone

Frequency range:	300 Hz to 6 kHz at -10 dB
Sensitivity:	1.8 mV/Pa (-55 dBV/Pa ± 3 dB)
Impedance:	400 Ω ± 20 % at 1 kHz
Directivity:	Omnidirectional

### Speaker

Frequency range:	700 Hz to 6 kHz at -10 dB
Effective sound pressure:	86 dB/1 W/1 m ± 3 dB
Impedance:	4 Ω ± 20 % at 1 kHz
Maximum output:	2 W

# ML76

**Dynamic speaker  
microphone  
with three buttons and  
volume control**

Article-No.:  
**2310-001-001-51**



## Product:

### Characteristics

- Reversible converter (Microphone = Loudspeaker)
- Solid plastic housing
- Very long life switching contacts
- Mount for easy handling

### Options

- Customized plugs and cables
- Special button symbols

### Application range

- Radio and PA systems in mobile public safety communications

### Accessories

- HV7 mount
- HV13 mount
- HV21 mount

### Scope of delivery

- Speaker microphone with spiral cable
- HV7 mount

## Technical Data:

### General

Housing:	Plastic PPO, black
Dimensions:	Height 104.5 mm, Width 52 mm, Depth 33 mm
Weight:	270 g (9.5 oz)
Connection:	8-wires spiral cable, 2 wires shielded, Draw length max. 1.5 m, without connector
Operating and display elements:	3 Buttons, 1 Volume control
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-20 °C to +60 °C (-4 °F to +140 °F)

### Microphone

Frequency range:	200 Hz to 7.5 kHz at -10 dB
Sensitivity:	3 mV/Pa (-50 dBV/Pa ± 3 dB)
Impedance:	150 Ω ± 20 % at 1 kHz
Directivity:	Omnidirectional

### Speaker

Frequency range:	300 Hz to 8 kHz at -10 dB
Effective sound pressure:	66 dB/0.05 W/1 m ± 3 dB
Impedance:	150 Ω ± 20 % at 1 kHz
Maximum output:	100 mW

# ML77

**Dynamic speaker  
microphone  
with three buttons and  
volume control**

Article-No.:  
**2310-010-000-51**



## Product:

### Characteristics

- Low noise microphone capsule
- Solid plastic housing
- Durable PEIGUM® spiral cable
- Very long life switching contacts
- Mount for easy handling
- Microphone preamplifier

### Options

- Customized plugs and cables
- Special button symbols

### Application range

- Radio and PA systems in mobile public safety (German public safety communication system „Funksystem 2000“)

### Accessories

- HV7 mount
- HV13 mount
- HV21 mount

### Scope of delivery

- Speaker microphone with PEIGUM® spiral cable
- HV7 mount

## Technical Data:

### General

Housing:	Plastic PPO, black
Dimensions:	Height 104.5 mm, Width 52 mm, Depth 33 mm
Weight:	210 g (7.4 oz)
Connection:	7-wires halogen free PEIGUM® spiral cable, shielded, Draw length max. 1.8 m, Binder 910 connector
Operating and display elements:	3 Buttons, 1 Volume control
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-25 °C to +60 °C (-13 °F to +140 °F)

### Microphone

Operating voltage (DC):	10 V
Frequency range:	400 Hz to 12 kHz at -10 dB
Sensitivity:	3 to 10 mV/Pa (-50 to -40 dBV/Pa ± 3 dB)
Impedance:	200 Ω ± 20 % at 1 kHz
Directivity:	Cardioid (at 1 kHz; 180° -15 dB)

### Speaker

Frequency range:	300 Hz to 8 kHz at -10 dB
Effective sound pressure:	66 dB/0.05 W/1 m ± 3 dB
Impedance:	150 Ω ± 20 % at 1 kHz
Maximum output:	100 mW

# ML90

**Electret speaker  
microphone  
with three buttons**

Article-No.:  
**2313-031-000-51**



## Product:

### Characteristics

- Solid plastic housing
- Durable PEIGUM® spiral cable
- Protection against splashed water
- Top-mounted speaker port
- 360° rotating Clip
- 3.5 mm connection for earphones

### Options

- Customized plugs and cables
- Special button symbol printing on housing

### Application range

- Portable radios

### Accessories

- Clip
- Earphone

### Scope of delivery

- Speaker microphone with clip and PEIGUM® spiral cable

## Technical Data:

### General

Housing:	Plastic PPO, black
Dimensions:	Height 92.5 mm, Width 69 mm, Depth 32.5 mm
Weight:	210 g (7.4 oz)
Connection:	11-wires halogen free PEIGUM® spiral cable, shielded, Draw length max. 1.8 m, without connector
Operating and display elements:	3 Buttons
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-25 °C to +60 °C (-13 °F to +140 °F)

### Microphone

Operating voltage (DC):	3 V to 16 V
Frequency range:	100 Hz to 5 kHz at -10 dB
Sensitivity:	100 mV/Pa (-20 dBV/Pa ± 3 dB)
Impedance:	47 Ω ± 20 % at 1 kHz
Directivity:	Omnidirectional

### Speaker

Frequency range:	500 Hz to 5 kHz at -10 dB
Effective sound pressure:	75 dB/1 W/1 m ± 3 dB
Impedance:	16 Ω ± 20 % at 1 kHz
Maximum output:	2 W

# HA8

Handset with  
release button

Article-No.:  
**2506-175-000-51**



## Product:

### Characteristics

- Dynamic ear capsule
- Electret microphone capsule
- Solid plastic housing
- Durable PUR spiral cable
- Button for hookswitch

### Options

- Customized plugs and cables
- Flame resistant plastic housing
- Amplifier
- Push-to-talk button and force release mechanism

### Application Range

- GSM-Applications
- Installations with limited space

### Accessories

- A8 cradle with screws

### Scope of Delivery

- Handset with PUR spiral cable
- A8 cradle with screws

## Technical Data:

### General

Housing:	Plastic PC-ABS, black
Dimensions with cradle:	Height 35 mm, Width 50 mm, Depth 160 mm
Weight:	190 g (6.7 oz)
Connection:	5-wires halogen free PUR spiral cable, 2 wires shielded, Draw length max. 1.5 m, plug RJ50 10 cond.
Operating and display elements:	1 release button, black
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-25 °C to +60 °C (-13 °F to +140 °F)

### Microphone

Operating voltage (DC):	1.5 V to 10 V
Frequency range:	100 Hz to 10 kHz at -10 dB
Sensitivity (in LRGP):	2.5 mV/Pa (-52 dBV/Pa ± 3 dB) at 3 V/2 kΩ
Impedance:	1.4 kΩ ± 20 % at 1 kHz/R <sub>L</sub> = 2 kΩ
Directivity:	Omnidirectional

### Earpiece

Frequency range:	400 Hz to 4 kHz at -10 dB
Sensitivity:	20 dBPa/V ± 3 dB (IEC 3.2 Low-Leak coupler)
Impedance:	110 Ω ± 20 % at 1 kHz
Maximum output:	10 mW

# HA8

**Handset with  
one push-to-talk button  
ready for connection  
on FuG 8/9**

Article-No.:  
**2506-186-001-51**



## Product:

### Characteristics

- Dynamic ear capsule
- Electret microphone capsule
- Solid plastic housing
- Durable PUR spiral cable

### Options

- Conductor RJ45 plug and adapter cable for terminal strip FuG 8/9

### Application Range

- Analog public safety radio systems
- Installations with limited space

### Accessories

- A8 cradle with screws

### Scope of Delivery

- Handset with PUR spiral cable and plug U127/U
- A8 cradle with screws

## Technical Data:

### General

Housing:	Plastic PC-ABS, black
Dimensions with cradle:	Height 36.2 mm, Width 50 mm, Depth 160 mm
Weight:	190 g (6.7 oz)
Connection:	5-wires halogen free PUR spiral cable, 2 wires shielded, Draw length max. 1.5 m, plug U127/U
Operating and display elements:	1 push-to-talk button, blue
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-25 °C to +60 °C (-13 °F to +140 °F)

### Microphone

Operating voltage (DC):	12 V
Frequency range:	150 Hz to 12 kHz at -10 dB
Sensitivity (in LRGP):	4 mV/Pa (-48 dBV/Pa ± 3 dB)
Impedance:	200 Ω ± 20 % at 1 kHz
Directivity:	Omnidirectional

### Earpiece

Frequency range:	400 Hz to 4 kHz at -10 dB
Sensitivity:	17 dBPa/V ± 3 dB (IEC 3.2 Low-Leak coupler)
Impedance:	15 kΩ ± 20 % at 1 kHz
Max. input voltage:	500 mV

# HA10

**Handset with  
thumb guard, one button  
and cradle**

Article-No.:  
**2506-025-000-51**



## Product:

### Characteristics

- Dynamic ear and microphone capsules
- Large push-to-talk button
- Durable PEIGUM® spiral cable
- Cradle with locking mechanism for the handset with release button
- Automatic hook switch mechanism in the cradle
- Connection via screw-down terminal strip

### Options

- Loudspeaker in the cradle
- Cradle with force release mechanism
- Flame resistant plastic housing
- Amplifier (built into in the A10 cradle)
- Electret microphone capsule

### Application Range

- Radio and PA systems in mobile and fixed applications

### Accessories

- Cradle loudspeaker 4 Ω
- Cradle loudspeaker 8 Ω

### Scope of Delivery

- Handset with PEIGUM® spiral cable and cradle

## Technical Data:

### General

Housing:	Plastic PC-ABS, black
Dimensions with cradle:	Height 85 mm, Width 63 mm, Depth 213 mm
Weight:	395 g (13.9 oz)
Connection:	12 cond. terminal strip in the cradle, 6-wires halogen free PEIGUM® spiral cable, 2 wires shielded, Draw length max. 1.35 m
Operating and display elements:	1 button, orange release buttons, black
Storage temperature:	-30 °C to +70 °C (-13 °F to +158 °F)
Operation temperature:	-20 °C to +60 °C (-4 °F to +140 °F)

### Microphone

Frequency range:	200 Hz to 6 kHz at -10 dB
Sensitivity (in LRGP):	1 mV/Pa (-60 dBV/Pa ± 3 dB)
Impedance:	200 Ω ± 20 % at 1 kHz
Directivity:	Omnidirectional

### Earpiece

Frequency range:	300 Hz to 4 kHz at -10 dB
Sensitivity:	26 dBPa/V ± 3 dB (IEC 3.2 Low-Leak coupler)
Impedance:	300 Ω ± 20 % at 1 kHz
Maximum output:	10 mW



# HA11

**Handset with  
one button and cradle**

Article-No.:  
**2506-035-000-51**



## Product:

### Characteristics

- Dynamic ear and microphone capsules
- Large push-to-talk button
- Durable PEIGUM® spiral cable
- Cradle with locking mechanism for the handset with release button
- Automatic hook switch mechanism in the cradle
- Connection via screw-down terminal strip

### Options

- Loudspeaker in the cradle
- Cradle with force release mechanism
- Flame resistant plastic housing
- Amplifier (built into in the A10 cradle)
- Electret microphone capsule

### Application Range

- Radio and PA systems in mobile and fixed applications

### Accessories

- Cradle loudspeaker 4 Ω
- Cradle loudspeaker 8 Ω

### Scope of Delivery

- Handset with PEIGUM® spiral cable and cradle

## Technical Data:

### General

Housing:	Plastic PC-ABS, black
Dimensions with cradle:	Height 85 mm, Width 63 mm, Depth 213 mm
Weight:	380 g (13.4 oz)
Connection:	12 cond. terminal strip in the cradle, 6-wires halogen free PEIGUM® spiral cable, 2 wires shielded, Draw length max. 1.35 m
Operating and display elements:	1 button, orange release buttons, black
Storage temperature:	-30 °C to +70 °C (-13 °F to +158 °F)
Operation temperature:	-20 °C to +60 °C (-4 °F to +140 °F)

### Microphone

Frequency range:	200 Hz to 6 kHz at -10 dB
Sensitivity (in LRGP):	1 mV/Pa (-60 dBV/Pa ± 3 dB)
Impedance:	200 Ω ± 20 % at 1 kHz
Directivity:	Omnidirectional

### Earpiece

Frequency range:	300 Hz to 4 kHz at -10 dB
Sensitivity:	26 dBPa/V ± 3 dB (IEC 3.2 Low-Leak coupler)
Impedance:	300 Ω ± 20 % at 1 kHz
Maximum output:	10 mW



# HA26

Handset with  
one button

Article-No.:  
**2506-113-000-51**



## Product:

### Characteristics

- Unidirectional noise canceling electret microphone capsule
- Dynamic ear capsule
- Solid plastic housing
- Durable PEIGUM® spiral cable
- Automatic hook switch mechanism (A12 cradle only)
- Large push-to-talk button

### Options

- Customized plugs and cables
- Flame resistant plastic housing
- Amplifier
- Additional loudspeaker or hands-free microphone

### Application Range

- Mobile radio and PA systems with increased ambient noise

### Accessories

- A10 cradle
- A12, A12/2, A12/L cradle

### Scope of Delivery

- Handset with PEIGUM® spiral cable

## Technical Data:

### General

Housing:	Plastic PC-ABS, black
Dimensions:	Height 41 mm, Width 58 mm, Depth 209 mm
Weight:	195 g (6.9 oz)
Connection:	7-wires halogen free PEIGUM® spiral cable, 1 wire shielded, Draw length max. 1.5 m, without connector
Operating and display elements:	1 button, orange
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-25 °C to +60 °C (-13 °F to +140 °F)

### Microphone

Operating voltage (DC):	1.5 V to 10 V
Frequency range:	200 Hz to 14 kHz at -10 dB
Sensitivity (in LRGP):	2 mV/Pa (-54 dBV/Pa ± 3 dB) at 3 V/2 kΩ
Impedance:	1.4 kΩ ± 20 % at 1 kHz/R <sub>L</sub> = 2 kΩ
Directivity:	Cardioid (at 1 kHz; 180° -15 dB)

### Earpiece

Frequency range:	300 Hz to 4 kHz at -10 dB
Sensitivity:	26 dBPa/V ± 3 dB (IEC 3.2 Low-Leak coupler)
Impedance:	300 Ω ± 20 % at 1 kHz
Maximum output:	10 mW

# HA26

**Handset with three  
buttons for Sepura  
SRM3500 and SRM3900**

Article-No.:  
**2506-198-000-51**



## Product:

### Characteristics

- Unidirectional noise canceling electret microphone capsule
- Dynamic ear capsule
- Solid plastic housing
- Durable PEIGUM® spiral cable
- Automatic hook switch mechanism with A10 and A12 cradle
- Large push-to-talk button and two function buttons

### Options

- Customized plugs and cables
- Flame resistant plastic housing

### Application Range

- Mobile radio systems from Sepura (manufacturer)

### Accessories

- A10, A12, A12/2, A12/L cradle
- Adapter cable for SEPURA SRM3500 and SRM3900 in various lengths

### Scope of Delivery

- Handset with PEIGUM® spiral cable (Adapter cable is not included in the scope of delivery)

## Technical Data:

### General

Housing:	Plastic PC-ABS, black
Dimensions:	Height 41 mm, Width 58 mm, Depth 209 mm
Weight:	280 g (9.9 oz)
Connection:	9-wires halogen free PEIGUM® spiral cable, shielded, Draw length max. 1.5 m, plug RJ50 10 cond.
Operating and display elements:	3 buttons, orange (push-to-talk button), blue & yellow (function buttons)
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-25 °C to +60 °C (-13 °F to +140 °F)

### Microphone

Operating voltage (DC):	1.5 V to 10 V
Frequency range:	200 Hz to 14 kHz at -10 dB
Sensitivity (in LRGP):	5 mV/Pa (-46 dBV/Pa ± 3 dB) at 3 V/2.2 kΩ
Impedance:	1 kΩ ± 20 % at 1 kHz/R <sub>L</sub> = 2.2 kΩ
Directivity:	Cardioid (at 1 kHz; 180° -15 dB)

### Earpiece

Frequency range:	300 Hz to 4 kHz at -10 dB
Sensitivity:	26 dBPa/V ± 3 dB (IEC 3.2 Low-Leak coupler)
Impedance:	300 Ω ± 20 % at 1 kHz
Maximum output:	10 mW

# HA87

**Handset with  
one push-to-talk button,  
LCD display and  
keypad**

**Article-No.:  
2508-244-005-51**



## Product:

### Characteristics

- Graphics capable LCD display with backlight
- Fully DTMF keypad
- Integrated micro controller
- Dynamic ear capsule
- Electret microphone capsule
- Durable PEIGUM® spiral cable

### Options

- Customized plugs and cables
- Software Development Kit (SDK)
- Customized display panel and keypad
- Flame resistant housing

### Application Range

- Analog and digital radio systems
- Hand held controller for various public safety applications

### Accessories

- A8 cradle with screws

### Scope of Delivery

- Handset with PEIGUM® spiral cable
- A8 cradle with screws

## Technical Data:

### General

Housing:	Plastic PC-ABS, black
Dimensions with cradle:	Height 35 mm, Width 50 mm, Depth 160 mm
Weight:	190 g (6.7 oz)
Connection:	9-wires halogen free PEIGUM® spiral cable, shielded, Draw length max. 1.5 m, plug RJ50 10 cond.
Operating and display elements:	1 push-to-talk button, blue, 12 dialing keys, 9 function keys
Storage temperature:	-30 °C to +80 °C (-22 °F to +178 °F)
Operation temperature:	-20 °C to +70 °C (-4 °F to +158 °F)
Display:	Backlit LCD with 96 x 54 Pixels, graphics capable
Firmware:	Terminal software

### Microphone

Operating voltage (DC):	9 V to 15 V
Frequency range:	150 Hz to 8 kHz at -10 dB
Sensitivity (in LRGP):	34 mV/Pa (-29 dBV/Pa ± 3 dB)
Impedance:	110 Ω ± 20 % at 1 kHz
Directivity:	Omnidirectional

### Earpiece

Frequency range:	400 Hz to 4 kHz at -10 dB
Sensitivity	34 dBPa/V ± 3 dB (IEC 3.2 Low-Leak coupler)
Impedance:	100 kΩ ± 20 % at 1 kHz
Max. input voltage:	80 mV

**A8**

**Cradle for  
Handset Series  
HA8x and HA8**

Article-No.:  
**2507-171-000-51**

**Product:****Characteristics**

- Glass fiber strengthened plastic

**Options**

- Flame resistant version

**Accessories**

- A86 attachment housing

**Scope of Delivery**

- A8 cradle with screws

**Technical Data:****General**

Housing:	Plastic PA GV15, black
Dimensions:	Height 11.7 mm, Width 48 mm, Depth 55.6 mm
Weight:	15 g (0.5 oz)

# A10

**Cradle for  
handsets  
HA10 and HA11**

**Article-No.:  
2507-034-000-51**



## Product:

### Characteristics

- Solid plastic long cradle
- Buttons for releasing the handset
- Switching contact (Hook)
- Connection via screw-down terminal strip

### Options

- Flame resistant version
- Black release buttons
- Force release mechanism
- Long cradle for HA26 with magnet for switch contact in the handset

### Accessories

- Cradle loudspeaker 4 Ω
- Cradle loudspeaker 8 Ω

### Scope of Delivery

- A10 cradle with base plate

## Technical Data:

### General

Housing:	Plastic PC-ABS, black
Dimensions:	Height 40.5 mm, Width 63 mm, Depth 203 mm
Weight:	165 g (5.8 oz)
Connection:	12 cond. terminal strip
Operating and display elements:	Release buttons, orange

# A12

**Cradle for  
handset HA26**

**Article-No.:  
2507-102-000-51**



## Product:

### Characteristics

- Solid plastic short cradle with base plate
- Magnet for hook switch
- Force release mechanism
- Slot for RJ45 or RJ50 connection socket

### Options

- Flat design without slot for connection socket (A12/2)
- Release button (A12/L)

### Accessories

- RJ45 connection socket
- RJ50 connection socket

### Scope of Delivery

- A12 cradle with base plate

## Technical Data:

### General

Housing:	Plastic PC-ABS, black
Dimensions:	Height 41.5 mm, Width 66 mm, Depth 78 mm
Weight:	70 g (2.4 oz)

# A86

## Attachment housing A86 for A8 cradle

Article-No.:  
**2507-185-001-51**



### Product:

#### Characteristics

- Solid plastic housing
- Use to integrate additional electronics
- Slots for two RJ45 or RJ50 connection sockets
- Cable exit on the back

#### Options

- Integrated hands-free electronics for handset series HA8x
- Loudspeaker (LS45)

#### Application Range

- Analog and digital radio systems in conjunction with HA8x

#### Accessories

- A8 cradle with screws for A86

#### Scope of Delivery

- Housing upper part
- Housing lower part
- Screws

### Technical Data:

#### General

Housing:	Plastic PC-ABS, black
Dimensions:	Height 29 mm, Width 50 mm, Depth 97 mm
Weight:	40 g (1.4 oz)

**OBH2****D-Loop earphone  
with phone plug****Article-No.:  
2502-225-001-51****Product:****Characteristics**

- Flexible ear piece
- High comfort due to light weight
- Connection cable with spiral part
- Angled 3.5 mm phone plug
- For use on a speaker microphone or portable radio

**Options**

- 2.5 mm phone plug

**Application Range**

- Portable radios in mobile applications

**Scope of Delivery**

- D-Loop earphone with cable and phone plug

**Technical Data:****General**

Housing:	Plastic, black
Dimensions:	Height 68 mm, Width 15 mm, Depth 46 mm
Weight:	21 g (0.7 oz)
Connection:	2-wires Draw length max. 40 cm, 3.5 mm phone plug
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-20 °C to +60 °C (-4 °F to +140 °F)

**Earpiece**

Frequency range:	100 Hz to 5 kHz at -10 dB
Effective sound pressure:	103 dB/1 mW ± 3 dB (IEC 3.2 Low-Leak coupler)
Impedance:	32 Ω ± 20 % at 1 kHz
Maximum output:	10 mW



## SSH1

Acoustic tube earphone  
with phone plugArticle-No.:  
**2502-226-001-51**

## Product:

## Characteristics

- Two different silicon ear insert components
- High comfort due to light weight
- Connection cable with spiral section
- Angled 3.5 mm phone plug
- For use on a speaker microphone or portable radio
- Easily concealed

## Options

- 2.5 mm phone plug

## Application Range

- Portable radios in mobile applications

## Accessories

- Spare part set including tube earphone and silicon ear piece components

## Scope of Delivery

- Acoustic tube earphone with cable and phone plug

## Technical Data:

## General

Housing:	Plastic, black
Tube earphone:	Plastic, transparent
Dimensions:	Height 15 mm, Width 15 mm, Depth 60 mm
Weight:	22 g (0.7 oz)
Connection:	2-wires Draw length max. 40 cm, 3.5 mm phone plug
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)
Operation temperature:	-20 °C to +60 °C (-4 °F to +140 °F)

## Earpiece

Frequency range:	200 Hz to 6 kHz at -10 dB
Effective sound pressure:	78 dB/1 mW ± 3 dB (IEC 3.2 Low-Leak coupler)
Impedance:	32 Ω ± 20 % at 1 kHz
Maximum output:	10 mW

# PS12

**Desktop system with  
dynamic microphone and  
one button**

Article-No.:  
**6401-049-000-40**



## Product:

### Characteristics

- Rugged metal housing
- Dynamic unidirectional high noise canceling gooseneck microphone
- Very long life double switching contact

### Options

- Customized plugs and cables
- Special button colors or symbols
- Microphone preamplifier
- Electret microphone mounted on 8 mm gooseneck
- Up to three buttons and LEDs
- Black matte housing

### Application Range

- Radio and PA systems in fixed indoor applications

### Accessories

- WS16 windscreen

### Scope of Delivery

- Desktop system
- Strain relief

## Technical Data:

### General

Microphone head:	Brass, sand blasted chrome (matte)	
Gooseneck:	Metal, matte silver coated	
Housing:	Metal, matte silver coated	
Dimensions:	Mic. head:	Length 80 mm, Ø 24 mm
	Gooseneck:	Length 200 mm, Ø 11 mm
	Housing:	Height 32 mm, Width 105 mm, Depth 160 mm
Weight:	650 g (22.9 oz)	
Connection:	Cable and plug not included	
Operating and display elements:	1 Button, black	
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)	
Operation temperature:	-20 °C to +60 °C (-4 °F to +140 °F)	

### Microphone

Frequency range:	150 Hz to 12 kHz at -10 dB
Sensitivity:	1 mV/Pa (-60 dBV/Pa ± 3 dB)
Impedance:	200 Ω ± 20 % at 1 kHz
Directivity:	Cardioid (at 1 kHz; 180° -20 dB)

## PS12 USB

Desktop system  
with dynamic  
microphone and  
USB connection

Article-No.:  
**6401-003-000-40**



### Product:

#### Characteristics

- Dynamic unidirectional high noise canceling gooseneck microphone
- Device recognized as external sound card by the computer
- Buttons and LEDs recognized as HID (Human Interface Device)
- Compatible with Microsoft® Windows® XP, Vista and Windows® 7
- Demo software available

#### Options

- Electret microphone mounted on 8 mm gooseneck
- Various gooseneck lengths
- Special button colors or symbols
- Black matte housing

#### Application Range

- PC-based control centers in fixed indoor applications

#### Accessories

- WS16 windscreen
- Software sample kit (SSK)

#### Scope of Delivery

- Desktop system with USB cable
- Users manual

### Technical Data:

#### General

Microphone head:	Brass, sand blasted chrome (matte)	
Gooseneck:	Metal, matte silver coated	
Housing:	Metal, matte silver coated	
Dimensions:	Mic. head:	Length 80 mm, Ø 24 mm
	Gooseneck:	Length 200 mm, Ø 11 mm
	Housing:	Height 32 mm, Width 105 mm, Depth 160 mm
Weight:	770 g (27.1 oz)	
Connection:	2 m cable with USB-A plug	
Operating and display elements:	1 Button, black 1 LED, blue	
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)	
Operation temperature:	-10 °C to +55 °C (-14 °F to +131 °F)	

#### Microphone

Frequency range:	150 Hz to 12 kHz at -10 dB
Directivity:	Cardioid (at 1 kHz; 180° -20 dB)

# PS20

**Desktop system with  
dynamic microphone,  
loudspeaker, three  
buttons and three LEDs**

Article-No.:  
**6402-056-000-40**



## Product:

### Characteristics

- Rugged metal housing
- Dynamic unidirectional high noise canceling gooseneck microphone
- Integrated loudspeaker
- Three very high life double switching contacts
- Three LEDs
- ON/OFF toggle switch and volume control

### Options

- Customized plugs and cables
- Special button colors or symbols
- Microphone preamplifier
- Electret microphone mounted on 8 mm gooseneck
- Audio amplifier for loudspeaker
- Black matte housing

### Application Range

- Radio and PA systems in fixed indoor applications

### Accessories

- WS16 windscreen

### Scope of Delivery

- Desktop system
- Strain relief

## Technical Data:

### General

Microphone head:	Brass, sand blasted chrome (matte)	
Gooseneck:	Metal, matte silver coated	
Housing:	Metal, matte silver coated	
Dimensions:	Mic. head:	Length 80 mm, Ø 24 mm
	Gooseneck:	Length 200 mm, Ø 11 mm
	Housing:	Height 32 mm, Width 105 mm, Depth 160 mm
Weight:	700 g (24.7 oz)	
Connection:	Cable and plug not included	
Operating and display elements:	3 Buttons, green, orange, black; toggle switch; Potentiometer 47 Ω; 3 LEDs, green, red, yellow	
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)	
Operation temperature:	-20 °C to +60 °C (-4 °F to +140 °F)	

### Microphone

Frequency range:	150 Hz to 12 kHz at -10 dB
Sensitivity:	1 mV/Pa (-60 dBV/Pa ± 3 dB)
Impedance:	200 Ω ± 20 % at 1 kHz
Directivity:	Cardioid (at 1 kHz; 180° -20 dB)

### Loudspeaker

Frequency range:	1 kHz to 6 kHz at -10 dB
Effective sound pressure:	79 dB/1 W/1 m ± 3 dB
Impedance:	8 Ω ± 20 % at 1 kHz
Maximum output:	2 W

10.09.2010

Specifications subject to change. Product may differ from image.

# PS20 USB

**Desktop system  
with USB connection,  
loudspeaker, three  
buttons and three LEDs**

Article-No.:  
**6402-007-000-40**



## Product:

### Characteristics

- Dynamic unidirectional high noise canceling gooseneck microphone
- Integrated loudspeaker
- Ports for external accessories
- Device recognized as external sound card by the computer
- Buttons and LEDs recognized as HID (Human Interface Device)
- Compatible with Microsoft® Windows® XP, Vista and Windows® 7
- Demo software available

### Options

- Electret mic. mounted on 8 mm gooseneck
- Various gooseneck lengths
- Special button colors or symbols
- Black matte housing

### Application Range

- PC-based control centers in fixed indoor applications

### Accessories

- External power supply, various headsets
- Foot switch (PTT), Windscreen
- Software sample kit (SSK)

### Scope of Delivery

- Desktop system with USB cable

10.09.2010

## Technical Data:

### General

Microphone head:	Brass, sand blasted chrome (matte)	
Gooseneck:	Metal, matte silver coated	
Housing:	Metal, matte silver coated	
Dimensions:	Mic. head:	Length 80 mm, Ø 24 mm
	Gooseneck:	Length 200 mm, Ø 11 mm
	Housing:	Height 32 mm, Width 105 mm, Depth 160 mm
Weight:	800 g (28.2 oz)	
Connection:	2 m cable with USB-A plug	
Operating and display elements:	3 Buttons, green, orange, black; ON/OFF toggle switch; volume control; 3 LEDs, green, blue, yellow	
Storage temperature:	-30 °C to +70 °C (-22 °F to +158 °F)	
Operation temperature:	-10 °C to +55 °C (-14 °F to +131 °F)	

### Microphone

Frequency range:	150 Hz to 12 kHz at -10 dB
Sensitivity:	1 mV/Pa (-60 dBV/Pa ± 3 dB)
Impedance:	200 Ω ± 20 % at 1 kHz
Directivity:	Cardioid (at 1 kHz; 180° -20 dB)

### Loudspeaker

Integrated 2 Watt Class-D amplifier
Effective sound pressure: 79 dB/1 W/1 m ± 3 dB

Specifications subject to change. Product may differ from image.

**KL1****Dynamic  
loudspeaker**

Article-No.:  
**2601-001-000-51**

**Product:****Characteristics**

- Very rugged plastic housing
- Durable plastic speaker membrane
- Small design for easy installation
- Frequency range optimized for radio communication
- Flexible mount

**Options**

- Customized plugs and cables
- 8 Ω version
- Integrated volume control

**Application range**

- For mobile and fixed radio systems

**Accessories**

- KL1 spare parts set  
(mount and knurled screw)

**Scope of delivery**

- Loudspeaker with cable and mount

**Technical Data:****General**

Housing:	Plastic PA, black
Dimensions:	Height 72 mm, Width 77 mm, Depth 50 mm, Ø 58 mm
Weight:	175 g (6.1 oz)
Connection:	2-wire cable 2 m, without connector
Storage temperature:	-40 °C to +85 °C (-40 °F to +185 °F)
Operating temperature:	-30 °C to +60 °C (-22 °F to +140 °F)

**Loudspeaker**

Frequency range:	300 Hz to 6 kHz at -10 dB
Effective sound pressure:	83 dB/1 W/1 m ± 3 dB
Impedance:	4 Ω ± 20 % at 1 kHz
Maximum output:	max. 5 W

**KL1/B****Dynamic  
loudspeaker****Article-No.:  
2601-047-001-51****Product:****Characteristics**

- Very rugged plastic housing
- Small design for easy installation
- Frequency range optimized for hands-free systems
- Flexible mount

**Options**

- Customized plugs and cables
- 4 Ω version

**Application range**

- For mobile and fixed hands-free systems

**Accessories**

- KL1 spare parts set (mount and knurled screw)

**Scope of delivery**

- Loudspeaker with cable and mount

**Technical Data:****General**

Housing:	Plastic PA, black
Dimensions:	Height 72 mm, Width 77 mm, Depth 50 mm, Ø 58 mm
Weight:	225 g (7.9 oz)
Connection:	2-wire cable 3 m, without connector
Storage temperature:	-30 °C to +75 °C (-22 °F to +167 °F)
Operating temperature:	-25 °C to +60 °C (-13 °F to +140 °F)

**Loudspeaker**

Frequency range:	300 Hz to 16 kHz at -10 dB
Effective sound pressure:	83 dB/1 W/1 m ± 3 dB
Impedance:	8 Ω ± 20 % at 1 kHz
Maximum output:	max. 5 W

**KL3****Dynamic  
loudspeaker**

Article-No.:  
**2604-001-000-51**

**Product:****Characteristics**

- Solid plastic housing
- Wide frequency range
- Clamping or rotating mount
- Vertical or horizontal mounting

**Options**

- Customized plugs and cables
- 8 Ω version

**Application range**

- For mobile and fixed radio and hands-free systems

**Accessories**

- KL3 spare parts set  
(rotating mount, clamping mount and knurled screw)

**Scope of delivery**

- Loudspeaker with cable, rotating mount, clamping mount and knurled screw

**Technical Data:****General**

Housing:	Plastic PC-ABS, black
Dimensions:	Height 67 mm, Width 105 mm, Depth 55 mm
Weight:	350 g (12.3 oz)
Connection:	2-wire cable 2 m, without connector
Storage temperature:	-40 °C to +80 °C (-40 °F to +176 °F)
Operating temperature:	-25 °C to +60 °C (-13 °F to +140 °F)

**Loudspeaker**

Frequency range:	250 Hz to 8 kHz at -10 dB
Effective sound pressure:	90 dB/1 W/1 m ± 3 dB
Impedance:	4 Ω ± 20 % at 1 kHz
Maximum output:	max. 5 W



# DHL1/R

**Compact  
horn loudspeaker**

Article-No.:  
**6602-045-000-51**



## Product:

### Characteristics

- Rugged flame resistant plastic housing
- Very compact design
- High sound output
- Protection class IP65 (6K5) (IEC 60529; VW 80101)
- Salt fog resistant (IEC 60068; VW 80101)

### Options

- Customized plugs
- 8  $\Omega$  and 16  $\Omega$  versions
- Red housing

### Application range

- For mobile and fixed radio systems

### Scope of delivery

- Horn loudspeaker with cable

## Technical Data:

### General

Housing:	Plastic PA66, black flame resistant per UL94 V-0; NF F 16-101/102 I2/F2; BS6853 Table 7/8 Ib II
Dimensions:	Depth 80 mm, Height 125 mm, $\varnothing$ 115 mm
Weight:	940 g (33.1 oz)
Connection:	2-wire cable, halogen free, 6 m, without connector
Storage temperature:	-40 °C to +105 °C (-40 °F to +221 °F)
Operating temperature:	-25 °C to +85 °C (-13 °F to +185 °F)

### Loudspeaker

Frequency range:	600 Hz to 4 kHz at -10 dB
Effective sound pressure:	104 dB/1 W/1 m $\pm$ 3 dB
Impedance:	4 $\Omega$ $\pm$ 20 % at 1 kHz
Maximum output:	max. 25 W

# DHL1/R

**Compact  
horn loudspeaker**

Article-No.:  
**6602-045-000-53**



## Product:

### Characteristics

- Rugged flame resistant plastic housing
- Very compact design
- High sound output
- Protection class IP65 (6K5) (IEC 60529; VW 80101)
- Salt fog resistant (IEC 60068; VW 80101)

### Options

- Customized plugs
- 8 Ω and 16 Ω versions
- Black housing

### Application range

- For mobile and fixed radio systems

### Scope of delivery

- Horn loudspeaker with cable

## Technical Data:

### General

Housing:	Plastic PA66, red flame resistant per UL94 V-0; NF F 16-101/102 I2/F2; BS6853 Table 7/8 Ib II
Dimensions:	Depth 80 mm, Height 125 mm, Ø 115 mm
Weight:	940 g (33.1 oz)
Connection:	2-wire cable, halogen free, 6 m, without connector
Storage temperature:	-40 °C to +105 °C (-40 °F to +221 °F)
Operating temperature:	-25 °C to +85 °C (-13 °F to +185 °F)

### Loudspeaker

Frequency range:	600 Hz to 4 kHz at -10 dB
Effective sound pressure:	104 dB/1 W/1 m ± 3 dB
Impedance:	4 Ω ± 20 % at 1 kHz
Maximum output:	max. 25 W

## TF1

Gooseneck  
push-to-talk buttonArticle-No.:  
**2703-001-000-51**

## Product:

## Characteristics

- Rugged housing with gooseneck
- Position for improved ergonomics
- Perfect for specialty vehicles
- Long life switch contact
- Mounting bracket

## Options

- Customized plugs and cables

## Application range

- Radio and PA systems in mobile and fixed applications

## Accessories

- BW2 Mounting bracket

## Scope of delivery

- Gooseneck push-to-talk button with cable
- BW2 Mounting bracket

## Technical Data:

## General

Housing:	Plastic PA, black
Gooseneck:	Steel coil with external brass winding, black
Dimensions:	Length 250 mm, Head Ø 19 mm, Body Ø 15 mm, Gooseneck Ø 11 mm
Weight:	150 g (5.3 oz)
Connection:	2-wire cable, 1.5 m, without connector
Operating and display elements:	1 Button, yellow
Storage temperature:	-40 °C to +80 °C (-40 °F to +176 °F)
Operation temperature:	-25 °C to +70 °C (-13 °F to +158 °F)

## Switch

Switching capacity:	max. 24 VDC/500 mA
Life cycle:	200,000
Protection class:	IP40
Operating force:	max. 5 N

# TF13

**Water resistant  
gooseneck  
push-to-talk button**

**Article-No.:  
2703-045-000-51**



## Product:

### Characteristics

- Rugged housing with gooseneck
- Integrated LED
- Protection class IP67
- Very long life switch contact

### Options

- Customized plugs and cables

### Application range

- Radio and PA systems in mobile and fixed applications
- Perfect for specialty vehicles under in harsh environmental conditions

### Accessories

- BW2 Mounting bracket
- Dust cover

### Scope of delivery

- Gooseneck push-to-talk button with cable
- Dust cover
- BW2 Mounting bracket

## Technical Data:

### General

Housing:	Plastic PA, black
Gooseneck:	Steel coil with external brass winding, black
Dimensions:	Length 365 mm, Head Ø 19 mm, Body Ø 15 mm, Gooseneck Ø 11 mm
Weight:	270 g (9.5 oz)
Connection:	4-wire cable, 2 wires shielded 3.6 m, without connector
Operating and display elements:	1 Button, blue 1 LED, red
Storage temperature:	-40 °C to +85 °C (-40 °F to +185 °F)
Operation temperature:	-30 °C to +70 °C (-22 °F to +158 °F)

### Switch

Switching capacity:	max. 48 VDC/200 mA
Life cycle:	500,000
Protection class:	IP67
Operating force:	max. 3 N

### LED

Nominal current:	20 mA
Illuminance:	Up to 125 mcd
Colour:	Red
Series resistor:	Must be connected externally

# GOOSENECKS

**Goose necks for  
microphone heads**

**Article-No.:  
SEE ATTACHEMENT**



## Product:

### Characteristics

- Steel coil with external brass winding \*
- Chrome matte or black matte
- Ø 11 mm and Ø 15 mm with two M10 x 1 screw threads
- Ø 18 mm with M14 x 1.5 and M10 x 1 screw threads

\* Minimal generation of metal dust possible in operation

## Technical Data:

Diameter	Length	Weight	Smallest bend radius	Resulting bending angle	For fixed applications	For mobile applications
11 mm	150 mm	80 g (2.8 oz)	r ≈ 75 mm	90°	yes	no
	200 mm	100 g (3.5 oz)		120°		
	300 mm	130 g (4.6 oz)		150°		
15 mm	100 mm	100 g (3.5 oz)	r ≈ 125 mm	30°	yes	yes *
	150 mm	150 g (5.3 oz)		60°		
	300 mm	250 g (8.8 oz)		90°		
18 mm	240 mm	350 g (12.3 oz)	r ≈ 175 mm	30°	yes	yes
	340 mm	450 g (15.9 oz)		60°		
	440 mm	600 g (21.1 oz)		120°		

\* max. L = 150 mm

**BF2**

**Large mounting  
bracket with 10° angle**

Article-No.:  
**2001-041-000-41**

**Product:****Characteristics**

- M14 screw thread
- For mounting of goosenecks with Ø 18 mm
- Suitable for mounting on a-pillars in vehicles
- Three Ø 5 mm mounting holes
- One Ø 6 mm cable feedthrough hole

**Technical Data:****General**

Material, color:	Brass, matte black
Dimensions:	Length 126 mm, Width 33 mm, Ø 22 mm
Weight:	160 g (5.6 oz)

**BP1**

**Large base plate  
for goosenecks**

Article-No.:  
**1014-006-002-20**

**Product:****Characteristics**

- M10 screw thread
- For mounting of goosenecks with  
Ø 11 mm and Ø 15 mm
- Ø 58 mm hole circle 3 x 120° ± 5°,  
Ø 6 mm bore hole
- Optional with M14 screw thread for  
mounting of Ø 18 mm goosenecks

**Technical Data:****General**

Material, color:	Gray iron, hammer effect enamel grey
Dimensions:	Height 15 mm, Ø 80 mm
Weight:	270 g (9.5 oz)

**BP2****Base plate  
for goosenecks****Article-No.:  
1014-049-003-41****Product:****Characteristics**

- M14 screw thread
- For mounting of goosenecks with  
Ø 18 mm
- Four Ø 4 mm bore holes

**Technical Data:****General**

Material, color:	Brass, matte black
Dimensions:	Height 40 mm, Width 70 mm, Depth 38 mm
Weight:	280 g (9.9 oz)



**BP3****Base plate  
for goosenecks****Article-No.:  
1014-007-000-05****Product:****Characteristics**

- M10 screw thread
- For mounting of goosenecks with  
Ø 11 mm and Ø 15 mm
- Ø 48 mm hole circle 3 x 120° ± 1°,  
Ø 5 mm bore hole
- Optional with M14 screw thread for  
mounting of Ø 18 mm goosenecks

**Technical Data:****General**

Material, color:	Bronze, matte black plasma coated
Dimensions:	Height 25 mm, Ø 65 mm
Weight:	280 g (9.9 oz)

**BP4****Flange**

Article-No.:  
**1001-060-001-03**

**Product:****Characteristics**

- M10 screw thread
- For mounting of goosenecks with Ø 11 mm and Ø 15 mm
- Ø 33 mm hole circle 3 x 120° ± 1°, M5 screw holes
- Optional with M14 screw thread for mounting of Ø 18 mm goosenecks

**Technical Data:****General**

Material, color:	Brass, sand blasted chrome (matte)
Dimensions:	Height 17 mm, Ø 42 mm
Weight:	130 g (4.6 oz)

**BW1**

**High-strength right angle  
mount for goosenecks**

Article-No.:  
**1014-036-001-26**

**Product:****Characteristics**

- M14 screw thread
- For mounting of goosenecks with Ø 18 mm
- Three Ø 4.5 mm mounting holes
- One Ø 8 mm cable feedthrough hole

**Technical Data:****General**

Material, color:	Aluminium, matte black anodized
Dimensions:	Height 60 mm, Width 35 mm, Depth 40 mm
Weight:	41 g (1.4 oz)

**BW2**

**Right angle mount  
for TF1 and TF13**

Article-No.:  
**1001-065-001-41**

**Product:****Characteristics**

- M10 hole for goosenecks
- Two Ø 4 mm mounting holes

**Technical Data:****General**

Material, color:	Steel panel, matte black
Dimensions:	Height 44 mm, Width 18 mm, Depth 22 mm
Weight:	15 g (0.5 oz)

**BW3****L-Bracket for goosenecks**

Article-No.:  
**1001-140-002-09**

**Product:****Characteristics**

- For Ø 8 mm gooseneck microphones
- Rubber cover available as accessory
- Hole for M10 goosenecks
- 26 mm long oblong M5 opening for adjustable mounting

**Technical Data:****General**

Material, color:	Steel panel, galvanized and blue passivated
Dimensions:	Height 20 mm, Width 18.4 mm, Depth 45 mm
Weight:	10 g (0.3 oz)

**BW3**

**L-Bracket for goosenecks  
with anti-twist slot**

Article-No.:  
**1001-140-000-09**

**Product:****Characteristics**

- For Ø 8 mm gooseneck microphones
- Anti-twist tab
- Rubber cover available as accessory
- Hole for M10 goosenecks
- 26 mm long oblong M5 opening for adjustable mounting

**Technical Data:****General**

Material, color:	Steel panel, galvanized and blue passivated
Dimensions:	Height 20 mm, Width 18.4 mm, Depth 45 mm
Weight:	10 g (0.3 oz)

**GA1**

**Rubber cover for  
L-Bracket BW3**

Article-No.:  
**1013-123-000-51**

**Product:****Characteristics**

- Hides unsightly connection points
- Suitable for BW3

**Technical Data:****General**

Material, color:	Plastic PE, black
Dimensions:	Height 25 mm, Width 26 mm, Depth 74 mm
Weight:	22 g (0.7 oz)

**GMV****Shock absorber  
for microphone heads****Article-No.:  
1001-109-003-51****Product:****Characteristics**

- Prevents the transfer of mechanical vibration to the microphone
- M10 screw thread
- For mounting between the microphone head and the gooseneck

**Technical Data:****General**

Material, color:	Rubber EDPM Shore 60, black
Dimensions:	Height 44 mm, Ø 17 mm
Weight:	20 g (0.7 oz)



**HF1**

**High-strength  
mounting bracket, 120°**

Article-No.:  
**2701-003-000-03**

**Product:****Characteristics**

- For mounting short Ø 8 mm, Ø 11 mm and Ø 15 mm goosenecks
- Ø 10 mm hole for goosenecks
- With self locking nut

**Technical Data:****General**

Material, color:	Steel panel, sand blasted chrome (matte)
Dimensions:	Height 53 mm, Width 31 mm, Depth 50 mm
Weight:	40 g (1.4 oz)

**HF2**

**High-strength  
mounting bracket, 120°**

Article-No.:  
**2701-004-000-03**

**Product:****Characteristics**

- For mounting microphone heads
- Rubber cushioned hollow screw with M10 screw thread

**Technical Data:****General**

Material, color:	Steel panel, sand blasted chrome (matte)
Dimensions:	Height 53 mm, Width 31 mm, Depth 50 mm
Weight:	47 g (1.6 oz)

**HF3**

**High-strength  
mounting bracket, 90°**

Article-No.:  
**2701-004-001-03**

**Product:****Characteristics**

- For mounting microphone heads
- Rubber cushioned hollow screw with M10 screw thread

**Technical Data:****General**

Material, color:	Steel panel, sand blasted chrome (matte)
Dimensions:	Height 53 mm, Width 31 mm, Depth 50 mm
Weight:	47 g (1.6 oz)

**HS1**

**Retaining clamp  
for goosenecks on  
motor bike handle bars**

Article-No.:  
**2701-015-000-03**

**Product:****Characteristics**

- M10 screw thread for  
Ø 15 mm goosenecks
- Optimized for Ø 22 mm  
handle bar mounting

**Technical Data:****General**

Material, color:	Brass, sand blasted chrome (matte)
Dimensions:	Height 53 mm, Width 65 mm, Depth 21 mm
Weight:	120 g (4.2 oz)

**HV5****Rugged  
plastic mount****Article-No.:  
2701-001-000-51****Product:****Characteristics**

- For hand microphones with Ø 24 mm body
- Screw set included

**Technical Data:****General**

Material, color:	Plastic PA, black
Dimensions:	Height 40 mm, Width 43 mm, Depth 45 mm
Weight:	17 g (0.6 oz)

**HV7****Rugged  
plastic mount****Article-No.:  
2701-002-000-51****Product:****Characteristics**

- For speaker microphones
- Screw set included

**Technical Data:****General**

Material, color:	Plastic PA, black
Dimensions:	Height 53 mm, Width 43 mm, Depth 27 mm
Weight:	10 g (0.3 oz)

**HV13****Rugged  
plastic mount****Article-No.:  
2701-037-000-51****Product:****Characteristics**

- For speaker microphones
- Screw set included

**Technical Data:****General**

Material, color:	Plastic PA, black
Dimensions:	Height 37 mm, Width 35 mm, Depth 20 mm
Weight:	9 g (0.3 oz)

**HV21****Rugged  
plastic mount****Article-No.:  
2701-038-000-51****Product:****Characteristics**

- For speaker microphones
- Screw set included

**Technical Data:****General**

Material, color:	Plastic PA, black
Dimensions:	Height 69 mm, Width 43 mm, Depth 27 mm
Weight:	20 g (0.7 oz)



**WS16****Windscreen  
for microphones****Article-No.:  
1010-042-003-64****Product:****Characteristics**

- For microphones with 24 mm diameter head

**Technical Data:****General**

Material, color:	Filter foam, 60 PPI, anthracite
Dimensions:	Ins. Ø 22 mm, Outs. Ø 50 mm, Height 54 mm
Weight:	2 g (0.01 oz)

**WS17**

**Windscreen for  
gooseneck microphones**

Article-No.:  
**1010-092-000-51**

**Product:****Characteristics**

- For gooseneck microphones ME352 and ME353

**Technical Data:****General**

Material, color:	Filter foam, 60 PPI, black
Dimensions:	Ins. Ø 11 mm, Outs. Ø 24 mm, Height 36 mm
Weight:	< 1 g (< 0.04 oz)

**WS18**

**Windscreen for  
gooseneck microphones**

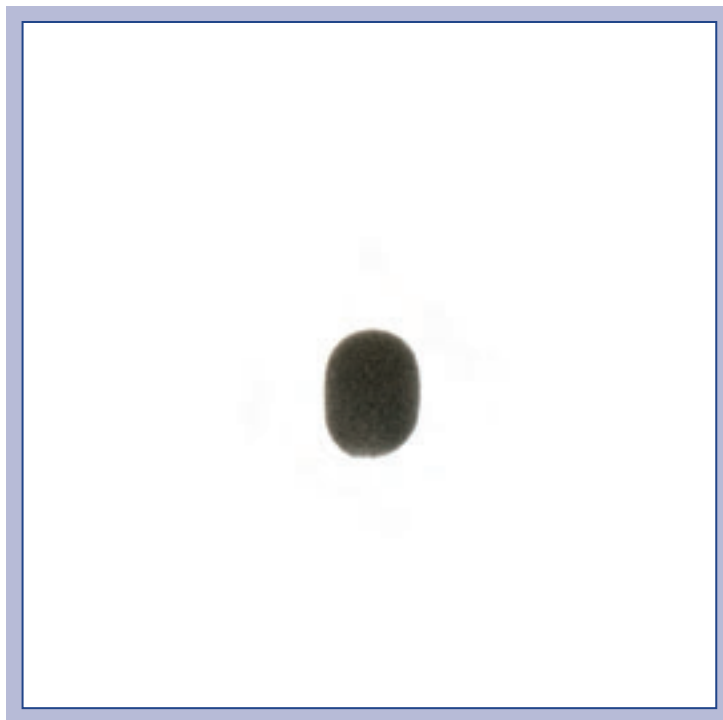
Article-No.:  
**1010-045-000-64**

**Product:****Characteristics**

- For gooseneck microphones ME251 and ME351

**Technical Data:****General**

Material, color:	Filter foam, 60 PPI, anthracite
Dimensions:	Ins. Ø 9 mm, Outs. Ø 16 mm, Height 40 mm
Weight:	< 1 g (< 0.04 oz)

**WS19****Windscreen  
for microphones****Article-No.:  
1010-091-000-64****Product:****Characteristics**

- For microphones ME1, ME2, ME3 and ME151

**Technical Data:****General**

Material, color:	Filter foam, 60 PPI, anthracite
Dimensions:	Ins. Ø 9 mm, Outs. Ø 16 mm, Height 20 mm
Weight:	< 1 g (< 0.04 oz)

# WS20

**Windscreen for  
gooseneck microphones**

Article-No.:  
**1010-164-000-51**



## Product:

### Characteristics

- For gooseneck microphone ME353

## Technical Data:

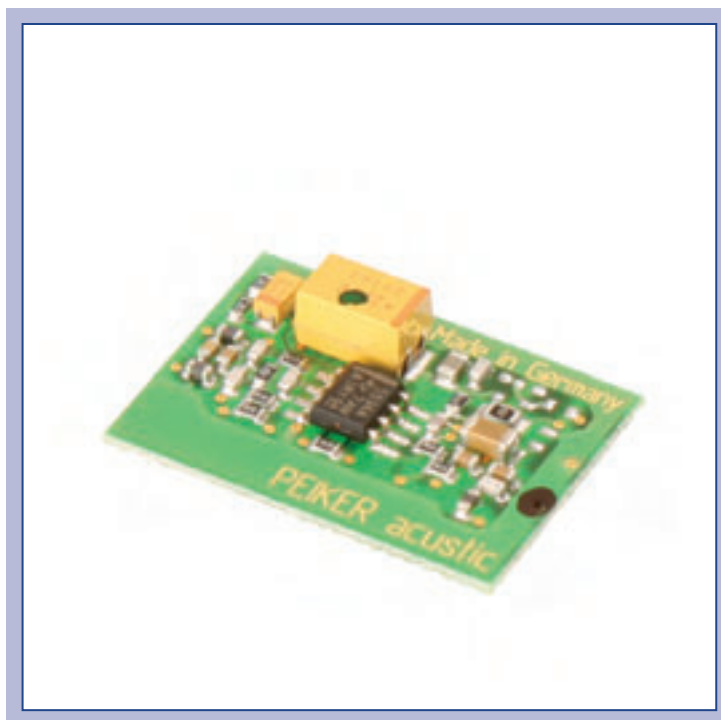
### General

Material, color:	Filter foam, 60 PPI, black
Dimensions:	Ins. Ø 7.6 mm, Outs. Ø 19 mm, Height 39 mm
Weight:	< 1 g (< 0.04 oz)

**V856**

**2-wire amplifier for  
dynamic microphones**

Article-No.:  
**2089-856-005-00**

**Product:****Characteristics**

- Universal preamplifier for dynamic microphones
- Amplification adjustable with parallel resistors
- Potentiometer for adjusting the output voltage

**Options**

- 3-wire version with potentiometer (V857-5)
- Preconfigured amplification levels

**Application range**

- For dynamic microphones with slot for amplifiers

**Scope of delivery**

- Amplifier circuit board
- Connecting diagram

**Technical Data:****General**

Dimensions:	Height 5.5 mm, Width 26.3 mm, Depth 19.2 mm
Weight:	2 g (0.01 oz)
Connection:	solder pads
Storage temperature:	-40 °C to +105 °C (-40 °F to +221 °F)
Operating temperature:	0 °C to 70 °C (32 °F to 158 °F)
2-wire op. voltage (DC):	8 V to 30 V
3-wire op. voltage (DC):	8 V to 30 V
Frequency range:	50 Hz to 10 kHz at -10 dB
Amplification:	up to 54 dB

**V966**

**2-wire amplifier for  
dynamic microphones**

Article-No.:  
**2089-966-002-00**

**Product:****Characteristics**

- Universal preamplifier for dynamic microphones
- Amplification adjustable with parallel resistors
- Potentiometer for adjusting the output voltage

**Options**

- 3-wire version (V967-0)
- Preconfigured amplification levels

**Application range**

- For dynamic microphones with slot for amplifiers

**Scope of delivery**

- Amplifier circuit board
- Connecting diagram

**Technical Data:****General**

Dimensions:	Height 6.7 mm, Width 26.3 mm, Depth 19.2 mm
Weight:	2 g (0.01 oz)
Connection:	solder pads
Storage temperature:	-40 °C to +105 °C (-40 °F to +221 °F)
Operating temperature:	-30 °C to +80 °C (-22 °F to +176 °F)
2-wire op. voltage (DC):	3 V to 10 V
3-wire op. voltage (DC):	1 V to 7 V
Frequency range:	50 Hz to 7 kHz at -10 dB
Amplification:	up to 54 dB

# PTCARPHONE 3

After market car phone  
with hands-free system

Article-No.:  
**2609-049-116-51**



## Product:

### Characteristics

- Wired handset for discreet phone calls
- Excellent speech and audio quality
- Data logger
- Data transmission via GSM, GPRS/EDGE
- Interface for second handset
- Free firmware updates (mobile provider data charges may apply)

### Application Range

- For retrofitting into vehicles

### Accessories

- HA88 handset
- PTPhoneManager II
- Gooseneck microphone ME251

### Scope of Delivery

- Handset with cradle
- Loudspeaker
- Hands-free microphone
- Electronics box
- Extension cable for handset (2.5 m)
- Cable set incl. interface
- Quick user manual

## Technical Data:

### Dimensions & cable length

Electronics box:	Height 140 mm, Width 50 mm, Depth 35 mm
Handset:	Height 160 mm, Width 50 mm, Depth 25 mm
Loudspeaker:	Height 60 mm, Width 100 mm, Depth 45 mm
Hands-free microphone:	Cable length 3 m
Extension cable:	Cable length 2.5 m
Cable set:	Length 2 m

### Specifications

Capacity:	Storage for 1000 phone numbers
Display:	96 x 54 with 70 dpi resolution
Support Languages:	D, US, GB, FR, ESP, ITA, NL
Networks:	GSM 850/900/1800/1900 MHz
Operating temperature:	-20 °C to +70 °C (-4 °F to +158 °F)
Storage temperature:	-40 °C to +85 °C (-40 °F to +185 °F)
Interfaces:	RS232, GPRS
Operation voltage (DC):	10.8 V to 32 V
e1 approval number:	035674

Further information at: [www.ptcarphone.eu](http://www.ptcarphone.eu)



# PTCARPHONE 3 GPS

After market telematics system with hands-free system and GPS

Article-No.:  
**2609-049-117-51**



## Product:

### Characteristics

- Includes all PTCarPhone 3 features
- GPS positioning
- Can automatically record all routes
- Data transmission via SMS, E-Mail or FTP-Server with GPRS/EDGE
- Data logger (incl. GPS-Data)
- Interface for second handset

### Application Range

- For retrofitting into vehicles

### Accessories

- HA88 handset
- PTPhoneManager II
- Gooseneck microphone ME251

### Scope of Delivery

- Handset with cradle
- Loudspeaker
- Hands-free microphone
- Electronics box with integrated GPS module
- Extension cable for handset (2.5 m)
- Cable set incl. interface
- Quick user manual

## Technical Data:

### Dimensions & cable length

Electronics box:	Height 140 mm, Width 50 mm, Depth 35 mm
Handset:	Height 160 mm, Width 50 mm, Depth 25 mm
Loudspeaker:	Height 60 mm, Width 100 mm, Depth 45 mm
Hands-free microphone:	Cable length 3 m
Extension cable:	Cable length 2.5 m
Cable set:	Length 2 m

### Specifications

Capacity:	Storage for 1000 phone numbers
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Storage temperature:	-40 °C to +85 °C (-40 °F to +185 °F)
Interfaces:	RS232, GPRS
Operation voltage (DC):	10.8 V to 32 V
e1 approval number:	035674

Further information at: [www.ptcarphone.eu](http://www.ptcarphone.eu)

# PTPHONE-MANAGER II

Software for central  
maintenance of phone  
books for PTCarPhone  
fleets

Article-No.:

**6900-000-000-00**



## Product:

### Characteristics

- Data base address and contact data management
- Adding, editing and deleting of phone book entries
- Locking and unlocking of internal phone numbers
- Import and export of entries (Direct import from Microsoft® Outlook)
- Backup feature for saving your data
- Transmission methods: SMS, GSM and FTP via GPRS

### Application Range

- Vehicle fleets

### Scope of Delivery

- Software on disc
- GSM modem
- GSM antenna
- Power supply
- USB to Serial adapter
- Quick user manual

## Technical Data:

### System requirements

Microsoft® Windows® XP / Vista / 7

Intel® Pentium® IV/1 GHz or equivalent

256 MB of RAM

50 MB free HDD storage

Screen resolution 1024 x 768

Serial or USB interface

Further information at: [www.ptcarphone.eu](http://www.ptcarphone.eu)

## ABKÜRZUNGEN

### short cuts

	Beschreibung	Description
1; 2	Sonderausführung oder Anzahl	Special version or number of parts
200	200 Ohm Impedanz	200 Ohm impedance
1L	eine LED	one LED
2L	zwei LEDs	two LEDs
3L	drei LEDs	three LEDs
1T	eine Taste	one button
2T	zwei Tasten	two button
3T	drei Tasten	three buttons
1xUm (SPDT)	Umschaltkontakt	Single pole double throw switch
2xUm (DPDT)	Doppel-Umschaltkontakt	Double pole double throw switch
A	Auflage für Handapparat	Cradle for handset
AK	Anschlusskabel	Connection cable
BF	Befestigungsflansch	Mounting flange
BP	Bodenplatte	Base plate
BW	Befestigungswinkel	Mounting angle
C	Kabel	Cable
DD	Dynamisches Mikrofon	Dynamic microphone
DHL	Druckkammerlautsprecher	Horn loudspeaker
E	Erdfrei	Isolated from earth
EA	EIN/AUS Schalter	ON/OFF switch
EM	Einbaumikrofon (System)	Built-in microphone (system)
GA	Gummiabdeckung	Rubber cover
GMV	Körperschallabsorber	Impact sound absorber
HA	Handapparat	Handset
HF	Halteflansch	Holding flange
(HL)	Hoher Pegel	High level
HS	Halteschelle	Retaining clamp
HV	Haltevorrichtung	Holder
KL	Kleinlautsprecher	Loudspeaker
(LL)	Niedriger Pegel	Low level
LN	Geräuschkompensiert	Noise canceled
LS	Einbaulautsprecher	Built-in loudspeaker
LSR	Lautstärkeregler	Volume control
...m	Länge z.B. Kabel	Length e.g. for cables
ME	Elektret Mikrofon	Electret microphone
ML	Mikrofonlautsprecher	Speaker microphone
OBH	Ohrbügelhörer	D-Loop earphone
P	Potentiometer	Potentiometer
PS	Pultsystem	Desktop microphone
PTT	Sprechtaste	Push-to-talk button
RC	passive Leiterplatte	passive circuit board
RJ45	Westernstecker 8 polig	Western plug 8-pin
RJ50	Westernstecker 10 polig	Western plug 8-pin
Schl.	Schrumpfschlauch	Heat shrinking tube
Sh.	Schwanenhals	Gooseneck
SSH	Schallschlauchhörer	Acoustic tube earphone
St.	Anschlusstecker	Plug
TF	eine Taste	one button
TFR	zwei Tasten	two buttons
TF2R	drei Tasten	three buttons
TM	Dynamisches Mikrofon	Dynamic microphone
TTF	Doppelsprechtaste	Double button
V	aktive Leiterplatte (Verstärker)	active circuit board (amplifier)
WS	Windschutz	Windscreen
ZR	Zwangsentriegelung des Handapparat	Forced unlocking mechanism of the handset

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