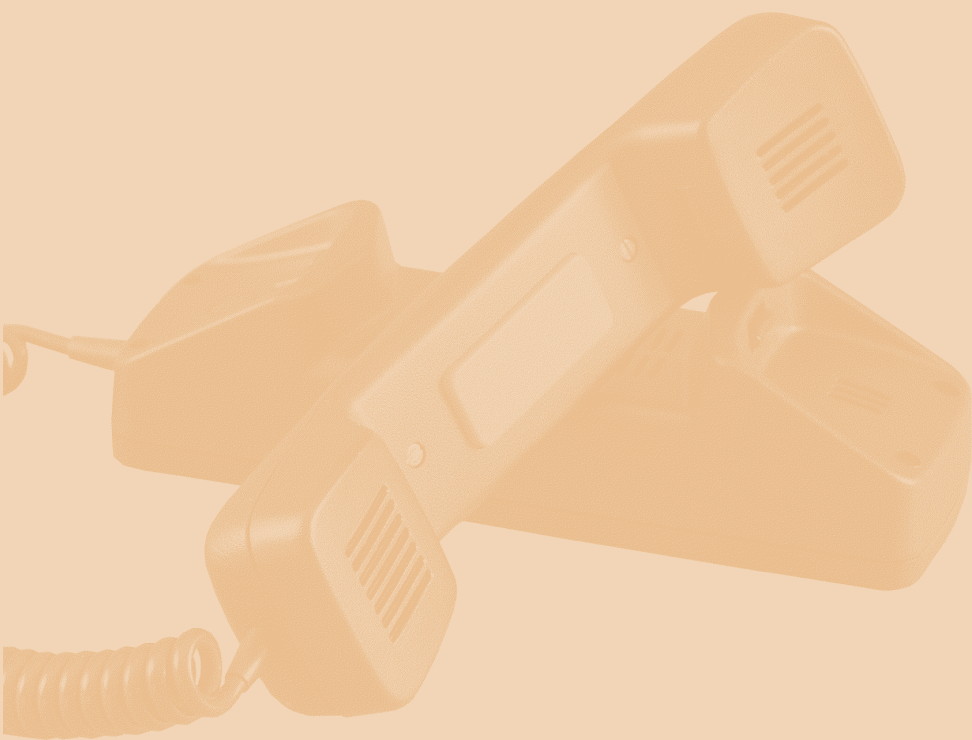




## Handsets



This catalogue contains our assortment of handsets and handset accessories. These handsets are specifically designed for a wide variety of uses, including emergency services, transportation and industrial applications. Our products are designed to have a long life-time, are repairable, and naturally spare parts are available. Beside our standard assortment we produce custom-made solutions according to a customer's specification. Tell us your problems, together we will find the solution.

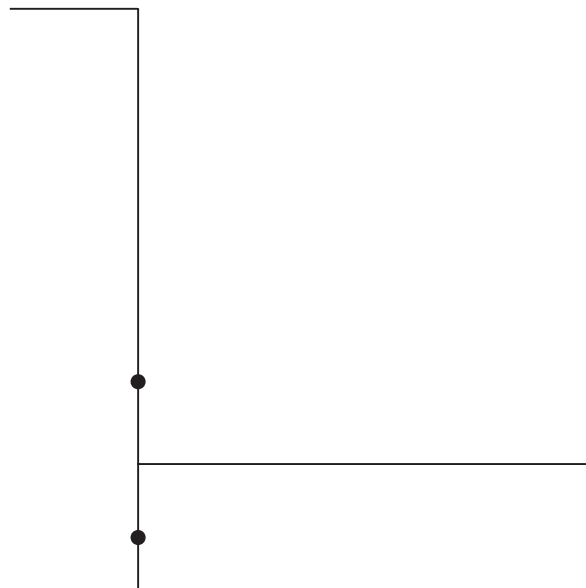
The Holmberg GmbH & Co. KG is certified according to DIN EN 9100 (includes DIN EN 9001), according to Directive 94/9/EG (Equipment intended for use in potentially explosive atmospheres), certified as Manufacturer of Equipment for Avionic Purpose according to JAR-21 Subpart G and Repair Station according to JAR-145.



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## Funk 75



The durable **Funk 75** handsets are especially designed for a wide variety of uses, including emergency services, transportation and industrial applications.

The soft foam padded handset features a leather grain effect.

Handset and rest have rounded edges. Thus the risk of injury by use in cars or ships is minimised.

The large, ergonomically arranged PTT key is easy to press.

In on-hook position, the handset is securely locked on the rest.

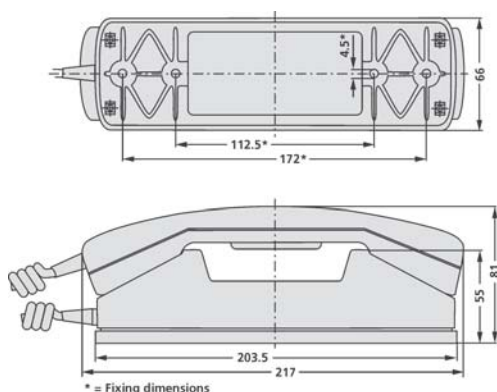
The matt structured finish is well adapted to the harsh conditions by mobile use. Handsets and rests are manufactured from a flame retardant material (self-extinguishing acc. to UL 94 V-0).

The Funk 75 handset range is modular and can be adapted to existing communication systems.

You can choose between complete sets or several components to make your individual configuration.

A wide range of accessories for the installation into tables and desks or wall fastening is available.





## Complete Sets

### Materials

Manufactured from LEXAN 940

### Colour

Handset and rest black, PTT key orange

### Weight

approx. 430 g » Without capsules

approx. 530 g » With dynamic microphone and receiver

### Components

Handset, Spiral cord

Handset rest with hookswitch (change over contact key),

10-pole terminal strip and base plate type

### Order details

### Part-No.

Handset with press-to-talk key:

» without capsules

**88-13-11840**

» with dynamic microphone and receiver

**88-13-11835**

» without capsules, handset rest

with loudspeaker (2 W, 8 Ω)

**88-13-11841**

Handset with blind button:

» without capsules

**88-13-11842**

» with dynamic microphone and receiver

**88-13-11843**

## Handsets

### Materials

Manufactured from LEXAN 940

### Colour

Handset and rest black, PTT key orange

### Weight

approx. 165 g » Without capsules and spiral cords

approx. 375 g » With dynamic microphone and receiver,

spiral cord, plug U-127/U-D

### Order details

### Part-No.

With PTT key, without capsules and spiral cords:

» press-to-talk key

**88-13-11844**

» break contact key

**88-13-11845**

» change over contact key

**88-13-11846**

» press-to-talk and break contact key

**88-13-11847**

» 2 x press-to-talk keys

**88-13-11848**

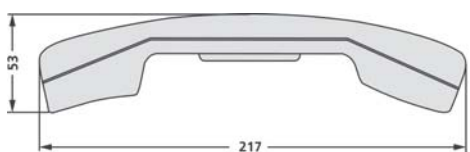
With blind button, without capsules and spiral cords **88-13-11849**

With press-to-talk key, dynamic microphone

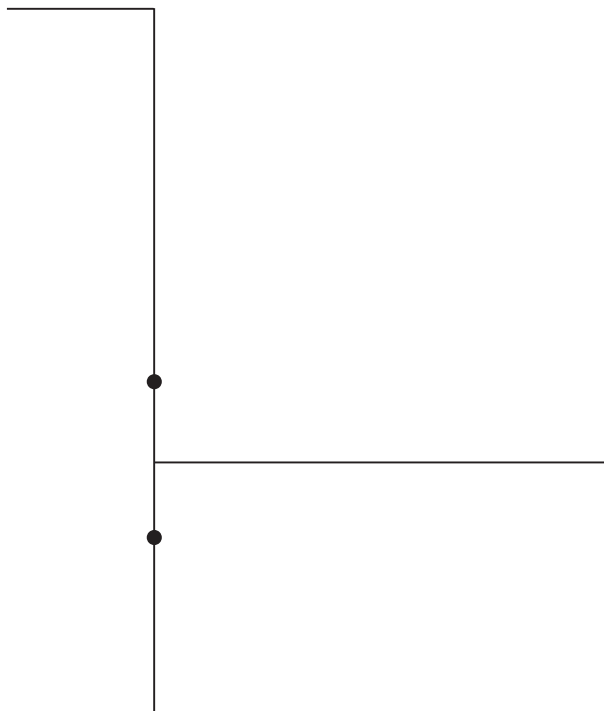
and receiver, spiral cord and 10-pole

terminal U-127/U-D

**88-13-11850**

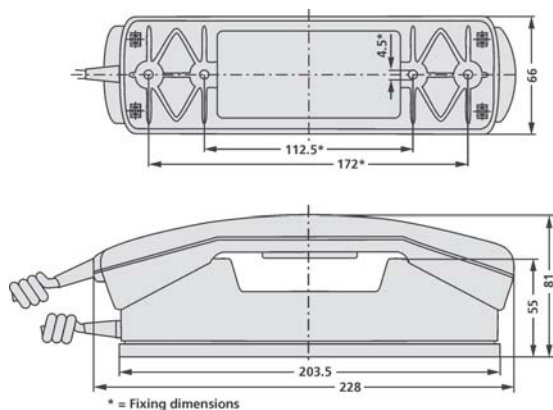


## Funk 750



The durable **Funk 750** handsets are especially designed for a wide variety of uses, including emergency services, transportation and industrial applications. Handset and rest have rounded edges. Thus the risk of injury by use in cars or ships is minimised. The handset is lightweight and ergonomical shaped. The large, ergonomically arranged PTT key is easy to press. In on-hook position, the handset is securely locked on the rest. The matt structured finish is well adapted to the harsh conditions by mobile use. Handsets and rests are manufactured from a flame retardant material (self-extinguishing acc. to UL 94 V-0). The Funk 750 handset range is modular and can be adapted to existing communication systems. You can choose between complete sets or several components to make your individual configuration. A wide range of accessories for the installation into tables and desks or wall fastening is available.





## Complete Sets

### Materials

Manufactured from LEXAN 940

### Colour

Handset and rest black, PTT key orange

### Weight

approx. 370 g » Without capsules

approx. 470 g » With dynamic microphone and receiver

### Components

Handset · Spiral cord

Handset rest with hookswitch (change over contact key),

10-pole terminal strip and base plate type

### Order details

### Part-No.

Handset with press-to-talk key:

» without capsules

**88-14-11851**

» with dynamic microphone and receiver

**88-14-11836**

» without capsules, handset rest

with loudspeaker (2 watts, 8 Ω)

**88-14-11852**

Handset with blind button, without capsules

**88-14-11853**

## Handsets

### Materials

Manufactured from LEXAN 940

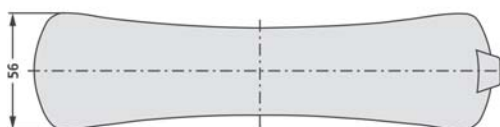
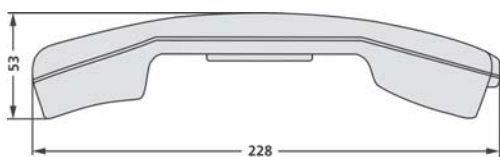
### Colour

Handset and rest black, PTT key orange

### Weight

approx. 100 g » Without capsules and spiral cords

approx. 315 g » With dynamic microphone and receiver,  
spiral cord, plug U-127/U-D



### Order details

### Part-No.

With PTT key, without capsules and spiral cords:

» press-to-talk key

**88-14-11142**

» break contact key

**88-14-11854**

» change over contact key

**88-14-11855**

» press-to-talk and break contact key

**88-14-11856**

» 2 x press-to-talk keys

**88-14-11857**

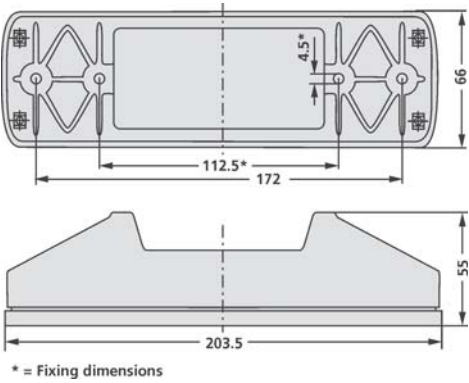
With blind button, without capsules and spiral cords **88-14-11858**

With press-to-talk key, dynamic microphone and  
receiver, spiral cord and 10-pole

terminal U-127/U-D

**88-14-11859**

Funk 75 / Funk 750



Accessories

Handset rest with base plate type

Manufactured from LEXAN 940  
black

Order details	Part-No.
With hookswitch and 10-pole terminal strip:	
» change over contact key	98-23-11341
» 2 change over contacts	98-23-11860
» 3 change over contacts	98-23-11861
» change over contact key, loudspeaker (2 watts, 8 Ω)	98-23-11862
Without hookswitch:	
» with 10-pole terminal strip	98-23-11863
» without terminal strip	98-23-11864

Base plate type (single part)

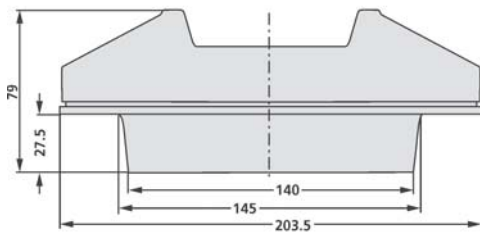
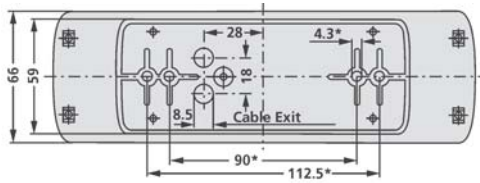
Manufactured from LEXAN 940

Part-No. 27-19-00243



## Funk 75 / Funk 750

### Accessories



#### Handset rest with base cup type

Manufactured from LEXAN 940  
black

#### Order details

#### Part-No.

With hookswitch and 10-pole terminal strip:

» change over contact key

**98-23-11865**

» 2 change over contacts

**98-23-11866**

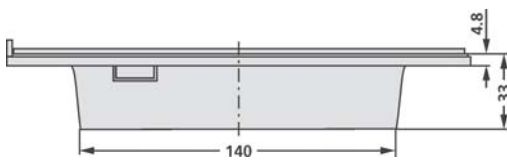
» 3 change over contacts

**98-23-11867**

#### Base cup type with strain-relief (single part)

Manufactured from LEXAN 940  
black

**Part-No. 27-18-00267**



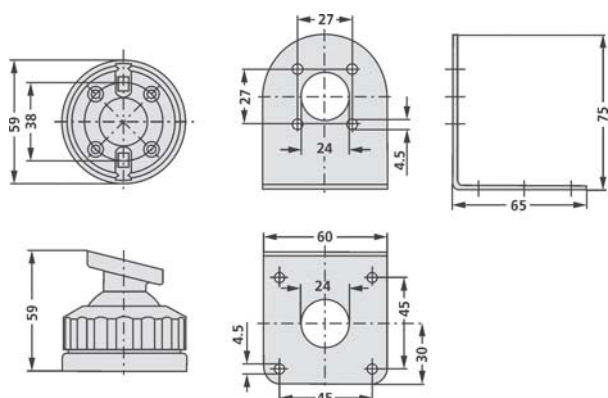
## Funk 75 / Funk 750

### Accessories

#### ● Ball joint with angle bracket

Angle from sheet steel,  
ball joint from polyamide,  
30 % GF, black,  
with fastening

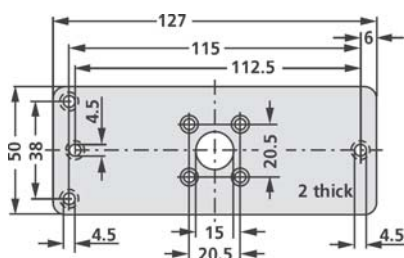
■ Part-No. 22-11-00070



#### ● Fixing plate for ball joint

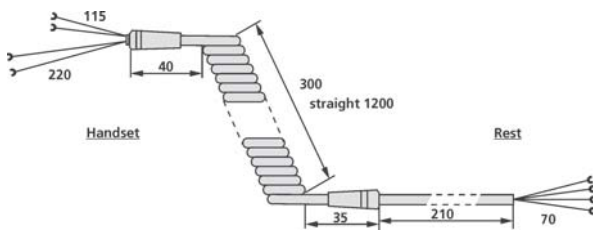
Sheet steel, black,  
with fastening

■ Part-No. 20-10-00132



## Funk 75 / Funk 750

### Spiral cords

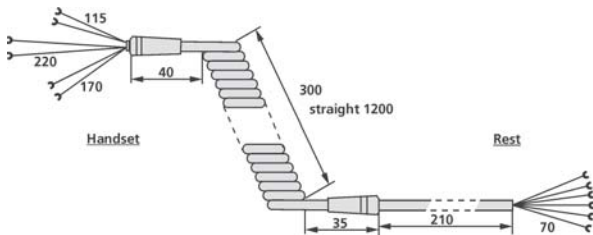


#### ● Spiral cord with polyurethane outer sheath self-extinguishing acc. to UL 94 V-0

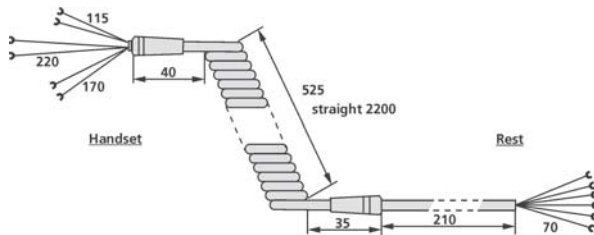
Colour: black  
Leads: Cu-blank, PVC-isolated  
Push-on-contacts acc. to DIN 46247  
Spade terminals acc. to DIN 46238

Length: coiled 30 cm,  
straight 120 cm  
4-core

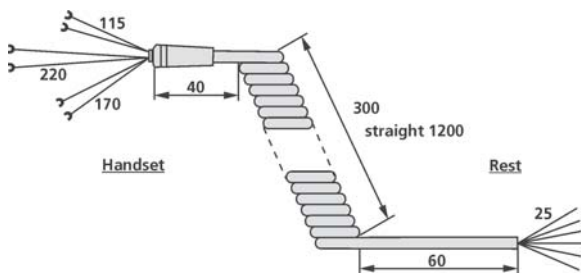
■ **Part-No. 30-70-00145**



6-core  
■ **Part-No. 30-70-00138**



**Length:** coiled 52 cm,  
straight 220 cm  
6-core  
■ **Part-No. 30-70-00137**



#### ● Spiral cord with polyurethane outer sheath self-extinguishing acc. to UL 94 V-0

Colour: black  
**Length:** coiled 30 cm, straight 120 cm  
**Leads:** Cu-blank, PVC-isolated  
Push-on-contacts acc. to DIN 46247  
Ends tinned  
4-core

■ **Part-No. 30-70-00141**

## Funk 75 / Funk 750



### Other accessories

#### ● Acoustic capsule receptacle for Funk 750

To reduce external resonance for the dynamic microphone and earpiece 80-21-11389

■ **Part-No. 27-15-00338**

#### ● Carbon transmitter capsule ZB/OB 80 mA for Funk 75

Ring insert 22-10-00106 necessary

**Connection:** spade terminals

**Sensitivity group:** II green

DC resistance  $140 \pm 60 \Omega$

■ **Part-No. 11-38-00033**

#### ● Ring insert for Carbon transmitter capsule 11-38-00033

Black

■ **Part-No. 22-10-00106**

#### ● Carbon transmitter capsule ZB 50 mA for Funk 750

Connection: contact plate and spade terminals 2.8 mm

Sensitivity group: II green

Impedance  $135 \pm 45 \Omega$  at max. 50 mA

■ **Part-No. 11-38-00030**

Dynamic microphone- and receiver capsules  
see page 18/19

## Funk 60

The Funk 60 handset is especially designed for mobile uses, but it's also suitable for stationary applications. A splash-proof version of the Funk 60 handset is available (IP 54).

### Handsets

#### Material

Duroplastic

#### Colour

Handset and PTT key: black

#### Components

Handset with press-to-talk key

#### Weight

approx. 360 g » Without capsules and spiral cords

approx. 620 g » With dynamic microphone and receiver, spiral cord and plug U-127/U-D

#### Order details

Without capsules:

» with ear cap, coupling ring at the microphone side inner diameter 36 mm

**Part-No. 88-11-11014**

» with ear cap, coupling ring at the microphone side inner diameter 37.5 mm

**Part-No. 88-11-11015**

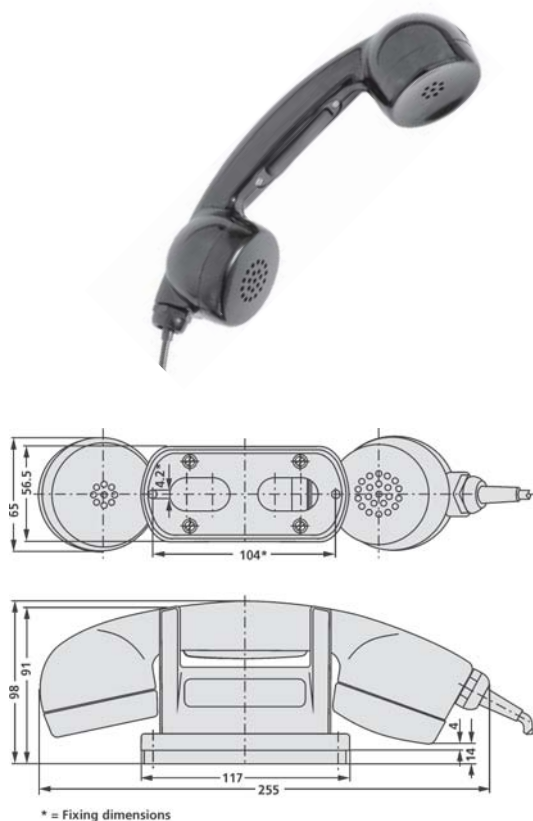
With dynamic microphone and receiver:

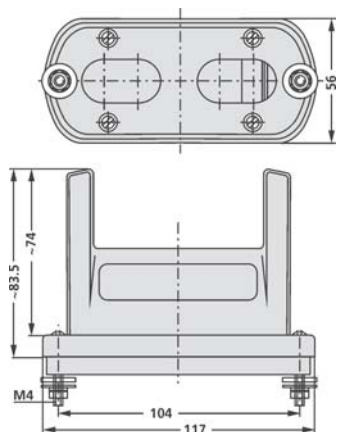
» with spiral cord, without plug, IP 54

**Part-No. 88-11-11625**

» with spiral cord and 10-pole terminal U-127/U-D

**Part-No. 88-11-11002**





### Handset rest

Duroplastic, black

#### Order details

With hookswitch (3 change over contacts):

» with base and rubber sheet,  
incl. fastening

**Part-No. 98-21-11298**

» without base and rubber sheet

**Part-No. 98-21-11297**

Basic handset base:

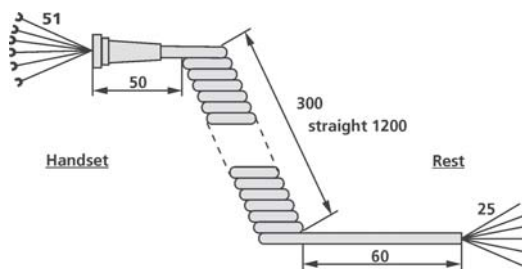
» with base and rubber sheet,  
incl. fastening

**Part-No. 98-21-11296**

» without base and rubber sheet

**Part-No. 98-21-11295**

## Spiral cords for Funk 60



### Spiral cord with polyurethane outer sheath, 6-core

**Colour:** black

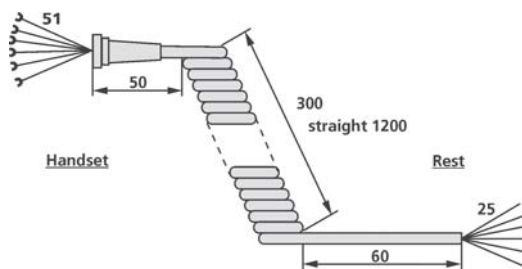
**Length:** coiled 30 cm, straight 120 cm

**Leads:** Cu-blank, PVC-isolated

Spade terminals acc. to DIN 46252

Ends tinned

**Part-No. 30-70-00074**



### Spiral cord with polyurethane outer sheath, 6-core

**Colour:** black

**Length:** coiled 30 cm, straight 120 cm

**Leads:** Cu-blank, teflon-isolated

Spade terminals acc. to DIN 46252

Ends tinned

**Part-No. 30-70-00075**

Funk 6o

Other accessories



Coupling rings

For dynamic capsule, black  
Inner diameter 36 mm

Part-No. 19-11-00146

Inner diameter 37.5 mm

Part-No. 19-11-00147



Flat sound inlet

For microphone capsule, black

Part-No. 27-14-00205



Rubber horn sound inlet

Black

Part-No. 27-17-00060



Coupling ring

For rubber horn sound inlet 27-17-00060

Black, inner diameter 47 mm

Part-No. 19-11-00150



Ear cap

Black

Part-No. 27-14-00206

Carbon transmitter capsule ZB 50 mA

Ring insert 19-11-00145 necessary

Terminals: contact plate and spade terminals 2.8 mm

Sensitivity group: II green

Impedance  $135 \pm 45 \Omega$  at max. 50 mA

Part-No. 11-38-00030

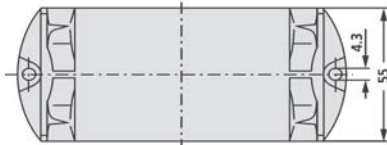
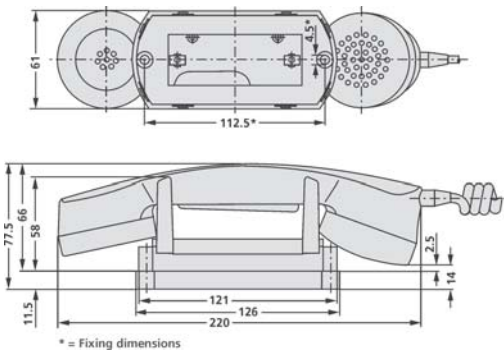
Ring insert for carbon transmitter capsule 11-38-00030

Black

Part-No. 19-11-00145

Dynamic microphone- and receiver capsules see page 18/19

Funk 70



The Funk 70 handset is especially used in mobile communication.

Handsets

Material	Colour
Makrolon T85	Black

**Weight**  
approx. 160 g » Without capsules and spiral cords  
approx. 390 g » With dynamic microphone and receiver, spiral cord and plug U-127/U-D

Order details	Part-No.
Handset with PTT key, without capsules and spiral cords:	
» press-to-talk key	88-12-11031
» change over contact key	88-12-11033
» press-to-talk and break contact key	88-12-11035
» 2 x press-to-talk keys	88-12-11036
Handset with blind button, without capsules and spiral cords	88-12-11558
Handset with press-to-talk key, dynamic microphone and receiver, spiral cord and 10-pole terminal U-127/U-D	88-12-11026

Handset rests

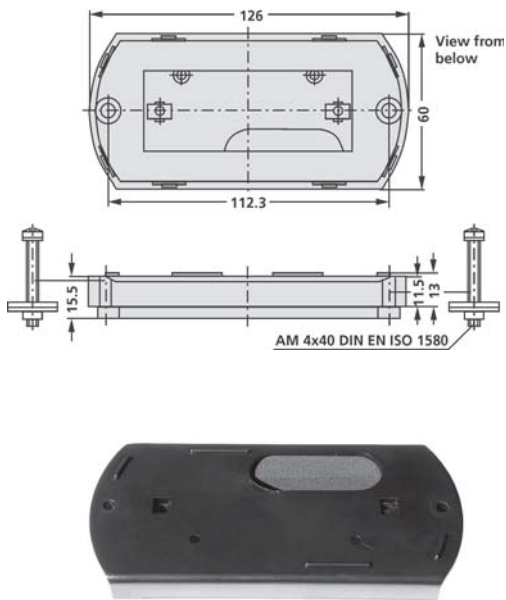
Polycarbonat, black

Order details	Part-No.
With 9-pole terminal strip:	
» hookswitch change over contact key	98-22-11305
» hookswitch 2 change over contacts	98-22-11306
With 7-pole terminal strip:	
» hookswitch 3 change over contacts	98-22-11309
Basic handset base:	
» without base plate	98-22-11301
» with base plate and rubber plate	98-22-11299



Funk 70

Accessories

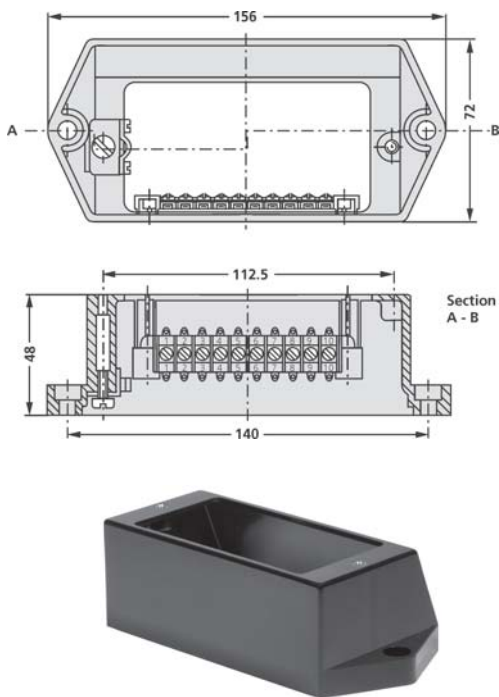


Base plate for handset rest

For mounting onto rough or arched surface

Polycarbonat, black

Order details	Part-No.
With 10-pole terminal strip:	
» with rubber plate	27-19-00088
» without rubber plate	27-19-00087
Basic handset base:	
» with rubber plate	27-19-00086
» without rubber plate	27-19-00085



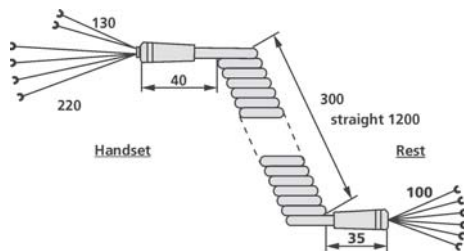
Socket housing for handset rest

Polycarbonat, black

Order details	Part-No.
» Basic handset base, with strain-relief	27-18-00090
» With 10-pole terminal strip, with strain-relief	27-18-00091

## Funk 70

## Spiral cords



● **Spiral cord with polyurethane outer sheath, 6-core**

**Colour:** Black

**Length:** coiled 30 cm, straight 120 cm

**Leads:** Cu-blank, PVC-isolated

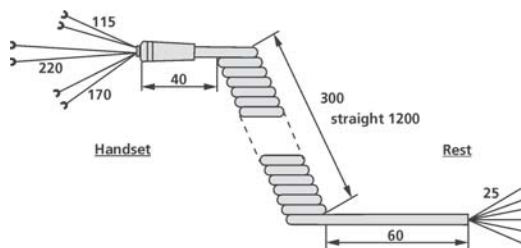
Push-on-contacts acc. to DIN 46247

Spade terminals acc. to DIN 46238

■ **Part-No. 30-70-00076**

Ends tinned

■ **Part-No. 30-70-00084**



● **Spiral cord with natural rubber outer sheath, 6-core**

**Colour:** Black

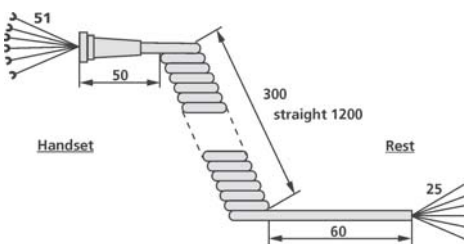
**Length:** coiled 30 cm, straight 120 cm

**Leads:** Cu-blank, teflon-isolated

Push-on-contacts acc. to DIN 46247

Ends tinned

■ **Part-No. 30-70-00078**



## Other accessories for Funk 70



● **Sound inlet**

Black

■ **Part-No. 27-14-00266**



● **Ear cap**

Black

■ **Part-No. 27-14-00265**

● **Carbon transmitter capsule ZB 50 mA**

Terminals: contact plate and spade terminals 2.8 mm

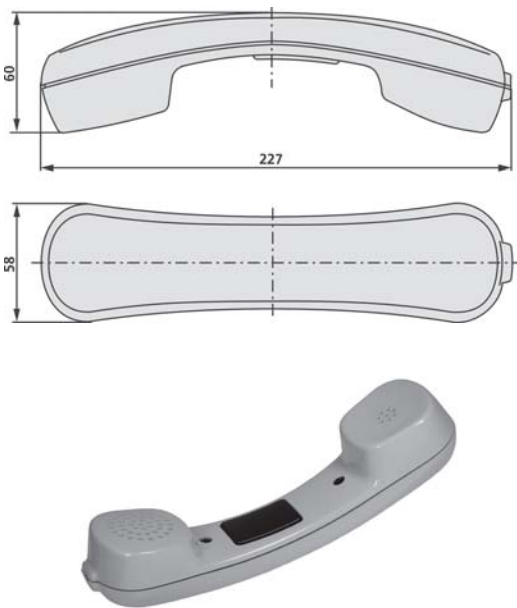
Sensitivity group: II green

Impedance  $135 \pm 45 \Omega$  at max. 50 mA

■ **Part-No. 11-38-00030**

Dynamic microphone- and receiver capsules see page 18/19

masterset



Lightweight Handset,  
available in various colours

Handsets

Material

Manufactured from a copolymer of ABS

Colour

Handset depending on model, PTT key black

Components

Without capsules

Handset with change over contact key

Spiral cord with plug housing acc. to DIN 46336

Weight

approx. 120 g » without capsules and spiral cords

approx. 170 g » without capsules, with 4-core spiral cord

Order details

Part-No.

With 4-core spiral cord:

» fern green

**88-16-11255**

» silicic grey

**88-16-11254**

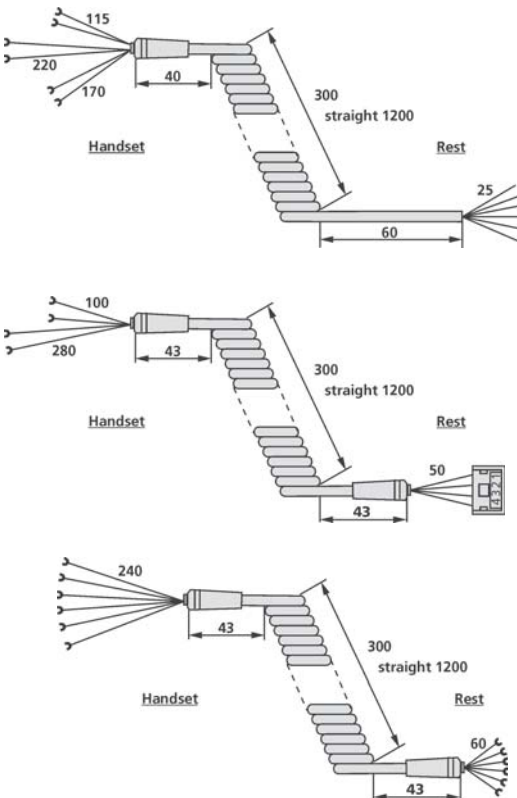
Without spiral cord:

» fern green

**88-16-11242**

» silicic grey

**88-16-11241**



Spiral cords for masterset

Spiral cord with polyurethane  
outer sheath, 6-core

Colour: black

Length: coiled 30 cm, straight 120 cm

Leads: Cu-blank, PVC-isolated

Push-on-contacts acc. to DIN 46247

Ends tinned

Part-No. 30-70-00084

Spiral cord with PVC outer sheath

Colour: black

Length: coiled 30 cm, straight 120 cm

Leads: Cu-blank, PVC-isolated

Spade terminals acc. to DIN 46238

4-core, plug housing acc.

to DIN 46336

Part-No. 30-70-00050

6-core, without plug housing







Part-No. 30-70-00049

Dynamic microphone capsules



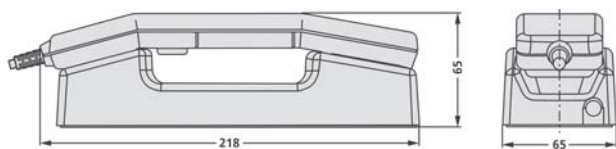
	Funk 75	Funk 750	Funk 70	Funk 60	masterset
<b>Dynamic microphone capsule</b> Terminals: push-on contacts acc. to DIN 46247 Single-stage amplifier Sensitivity: 100 mV/Pa Impedance: 1.5 KΩ <b>Part-No. 81-05-11411</b>	-	X	X	-	-
<b>Dynamic microphone capsule</b> Terminals: push-on contacts acc. to DIN 46247 Two-stage amplifier Sensitivity: 600 mV/Pa Impedance: 150 Ω <b>Part-No. 81-05-11603</b>	-	X	X	-	-
<b>Dynamic microphone capsule</b> (ring insert 19-11-00145 necessary) Terminals: contact plate Single-stage amplifier Sensitivity: 100 mV/Pa Impedance: 1.5 KΩ <b>Part-No. 81-05-11604</b>	-	-	X	X	-
<b>Dynamic microphone capsule</b> (Ring insert 19-11-00145 necessary) Terminals: contact plate Two-stage amplifier Sensitivity: 600 mV/Pa Impedance: 150 Ω <b>Part-No. 81-05-11605</b>	-	-	X	X	-
<b>Dynamic microphone capsule</b> Terminals: flat plugs for flat socket connectors 2.8 x 0.5 Single-stage amplifier Sensitivity: 110 mV/Pa Impedance: 3.5 KΩ with 6 mA feed <b>Part-No. 81-04-11532</b>	X	-	-	-	-
<b>Dynamic microphone capsule</b> Terminals: flat plugs for flat socket connectors 2.8 x 0.5 Two-stage amplifier Sensitivity: 500 mV/Pa Impedance: 170 Ω <b>Part-No. 81-04-11443</b>	X	-	-	-	-

## Dynamic transmitter/receiver capsules

	Funk 75	Funk 750	Funk 70	Funk 60	masterset
 <p><b>Dynamic transmitter/receiver capsule</b> (coupling ring 19-11-00147 necessary) Terminals: cable lugs acc. to DIN 46252 Sensitivity: 3.2 mV/Pa Resistance: 200 <math>\Omega</math> <b>Part-No. 80-20-11401</b></p>	-	-	-	X	-
 <p><b>Piezoelectric microphone capsule</b> Terminals: flat plugs for flat socket connectors 2.8 x 0.5 Sensitivity group: II green Resistance: 310 <math>\Omega</math> with 21 mA feed <b>Part-No. 11-38-00029</b></p>	-	X	X	X	X
 <p><b>Dynamic transmitter/receiver capsule</b> Terminals: push-on contacts acc. to DIN 46247 Sensitivity: 4.5 mV/Pa Resistance: 240 <math>\Omega</math> <b>Part-No. 80-11-11393</b></p>	X	-	-	-	-
 <p><b>Dynamic transmitter/receiver capsule</b> Terminals: push-on contacts acc. to DIN 46247 Sensitivity: 5 mV/Pa Resistance: 200 <math>\Omega</math> <b>Part-No. 80-21-11389</b></p>	-	X	-	-	-
 <p><b>Dynamic transmitter/receiver capsule</b> Terminals: cable lugs acc. to DIN 46252 Sensitivity: 5 mV/Pa Resistance: 200 <math>\Omega</math> <b>Part-No. 80-21-11415</b></p>	-	-	X	X	-
 <p><b>Dynamic receiver</b> Terminals: contact plate and flat plugs 2.8 mm Sensitivity group: III green Resistance: 260 <math>\Omega</math> <b>Part-No. 11-37-00032</b></p>	-	X	X	X	X

## N-89

The handset of the N-89 series are especially designed for use in mobile and stationary applications in noise disturbed environments. Their outstanding feature is the excellent ambient noise eliminations of the microphone. With this a perfect communication is guaranteed, even in noisy surroundings. Also, the N-89 sets have all the attributes that are necessary for mobile use: robust housing with rounded edges to minimise the risk of injuries, easy reachable PTT key and stable lock of the handset in the rest.



### Material

Manufactured from polycarbonat, self-extinguishing

### Colour

Depending on model

### Weight

approx. 160 g » Handset without cable

approx. 290 g » Handset with standard cable

### Service conditions

Degree of protection IP 40

Temperature range -25° C up to +55° C

### Components

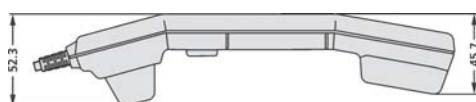
Handset with microphone and receiver, spiral cord (length coiled approx. 44 cm, straight approx. 2 m), without plug

### Amplifier (excepting N-89.5 and Part-No. 88-01-11692)

Operation voltage 10 V up to 28 V-

Current drain 10 mA at 10 V,

31 mA at 28 V (± 20 %)



## N-89.1

### Handset with electret microphone and amplifier

#### Application

The N-89.1 handset is especially designed for use in mobile and stationary applications in noise disturbed environment.

#### Configuration

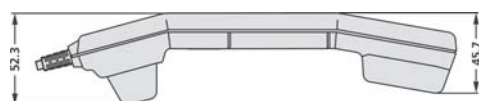
Electret microphone with amplifier, dynamic receiver (240  $\Omega$ ), PTT key (2 change over contacts), spiral cord

Black

■ **Part-No. 89-01-09504**

Pepperdust

■ **Part-No. 89-01-11748**



## N-89.2

### Splash-proof handset (IP 54)

#### Application

The N-89.2 handset is especially designed for use in mobile and stationary applications in noise disturbed environment. The handset is splash-proof and suitable for outdoor application.

#### Configuration

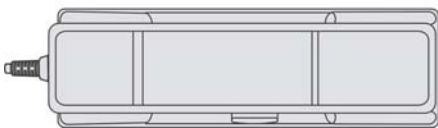
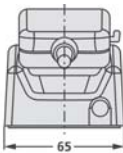
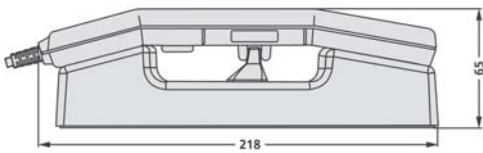
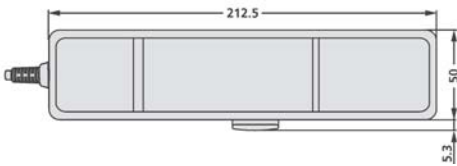
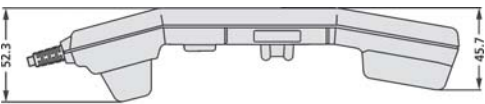
Electret microphone, dynamic receiver (100  $\Omega$ ), dry reed contact, spiral cord, black  
Degree of protection: IP 54

With amplifier

■ **Part-No. 89-01-11753**

Without amplifier

■ **Part-No. 88-01-11692**



**N-89.3**

● **Handset with exceptionally secure locking**

**Application**

The N-89.3 handset is especially designed for use in mobile and stationary applications in noise disturbed environment. The feature of the N-89.3 is the especially stable lock. It guarantees, that the handset is reliably fixed in the rest even at strong vibrations (up to 16 g acceleration).

**Configuration**

Electret microphone with amplifier, dynamic receiver (570 Ω), PTT key, spiral cord

Black

■ **Part-No. 89-01-11751**



## N-89.4

### Handset with illuminated keyboard

#### Application

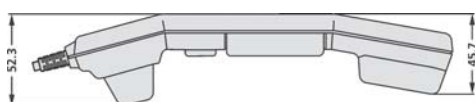
The N-89.4 handset is especially designed for use in mobile and stationary applications in noise disturbed environment. The handset has the same function as the standard handset series N-89 but is equipped with a keyboard with 10 numeric keys, asterisk and hash key. This keyboard is illuminated for use also by totally darkness. The handset supports DTMF dialing using DTMF tone pairs in accordance with CCITT Q.23. The keyboard illumination requires an operating voltage of 12 V, for the lone amplifier without illumination 10 V are enough.

#### Configuration

Electret microphone with amplifier,  
dynamic receiver (570  $\Omega$ ),  
PTT key, spiral cord

Pepperdust

Part-No. 89-01-11754



## N-89.5

### Handset with dynamic microphone

#### Application

The N-89.5 handset is especially designed for use in mobile and stationary applications in noise disturbed environment. The significant difference to the other N-89 handsets is the dynamic microphone.

#### Configuration

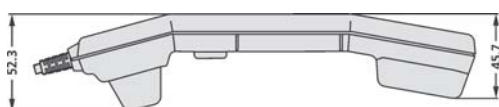
Dynamic microphone capsule (200  $\Omega$ ),  
dynamic receiver (240  $\Omega$ ),  
PTT key, spiral cord

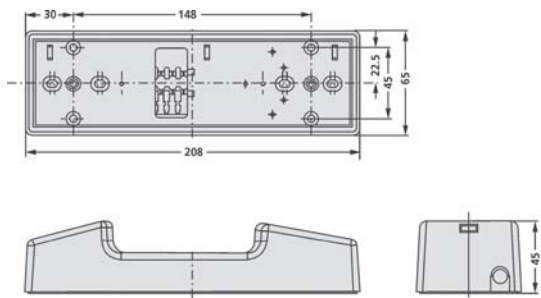
Black

Part-No. 88-01-11749

Pepperdust

Part-No. 88-01-09289





Handset rests for N-89

Basic version  
black

Part-No. 98-01-09503

pepperdust

Part-No. 98-01-09290

With hookswitch, 3 break contact keys  
black

Part-No. 98-01-11750

pepperdust

Part-No. 98-01-09890

With exceptionally secure locking  
black

Part-No. 98-01-11752

With magnetic locking  
black

Part-No. 98-01-08568

		N-89.1	N-89.2	N-89.3	N-89.4	N-89.5
98-01-08568	black	•	x	•	•	•
98-01-09290	pepperdust	x	•	•	x	x
98-01-09503	black	x	•	•	•	x
98-01-11752	black	•	•	x	•	•
98-01-11750	black	x	•	•	•	x
98-01-09890	pepperdust	x	•	•	x	x



N-90

Low-cost handset with dynamic microphone and dynamic receiver for mobile and stationary application

Material

Manufactured from a copolymer of ABS

Colour

Black

Components

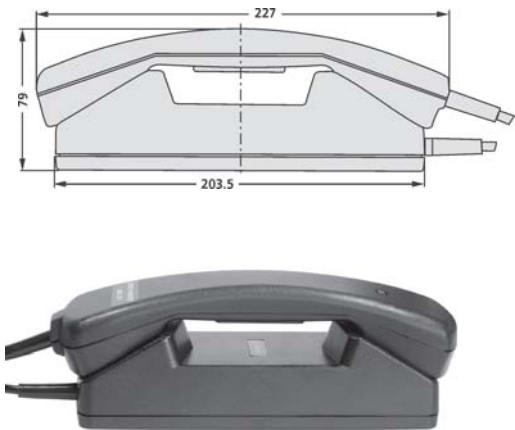
Handset with amplifier and press-to-talk key  
Handset rest with hookswitch (2 change over contacts)

Weight

approx. 480 g » Handset and rest

Handset and Rest

Complete set Part-No. 89-03-09039



## Germany

### Baden-Württemberg

#### Rheinland-Pfalz · Saarland

Holmberg Regionalbüro Südwest  
Tannenweg 2  
71287 Weissach  
Phone +49-7044-90 00 00  
Fax +49-7044-90 00 01  
eisfeld@holmco.de

Schollmeier Autofunk

*Distributor*

Heppenheimer Str. 23  
68309 Mannheim  
Phone +49-621-720 92 36  
Fax +49-621-720 92 37  
Peter.Schollmeier@Schollmeier.de

### Bayern

Günther Jakobus Industrievertretung

*Vertreter*

Postfach 13 08  
85703 Unterschleißheim  
Phone +49-89-310 49 22  
Fax +49-89-317 10 15

### Berlin · Brandenburg · Sachsen

#### Sachsen-Anhalt · Thüringen

IBK bunzel&kromer GmbH  
*Distributor*  
Egelpfuhlstr. 40a  
13581 Berlin  
Phone +49-30-35 10 61 11  
Fax +49-30-35 10 61 23  
kromer@ibk-berlin.de

### Nordrhein-Westfalen · Hessen

Holmberg Regionalbüro West  
Schulstr. 130  
47199 Duisburg  
Phone +49-2841-98 17 44  
Fax +49-2841-981 14 50  
ullrich@holmco.de

### Schleswig-Holstein · Hamburg

#### Bremen · Niedersachsen

#### Mecklenburg-Vorpommern

Holmberg Regionalbüro Nord  
Rühmels 41a  
24576 Bad Bramstedt  
Phone +49-4192-816 99 34  
Fax +49-4192-816 99 35  
sartorius@holmco.de

SCHNOOR Industrieelektronik

GmbH & Co. KG

*Distributor*

Fehmarnstr. 6  
24782 Büdelsdorf  
Phone +49-4331-34 76-0  
Fax +49-4331-34 76 20  
info@schnoor-ins.com  
www.schnoor-ins.com

## Europe

### Estonia

LATVEL Ltd.  
*Distributor*  
Kr. Valdemara 118  
LV-1013 Riga/Latvia  
Phone +371-736 08 31  
Fax +371-737 19 61  
latvel@junik.lv

### France

Holmberg FRANCE  
4, rue des Cressonnières  
F-95110 Sannois  
Phone +33-1-34 11 38 61  
Fax +33-1-34 10 88 41  
henon@holmberg.fr

### Greece

EM-Ingenieurbüro  
*Representative*  
25 Martiou Nr. 36  
GR-60100 Katerini  
Phone +302-3510-30889  
Fax +302-3510-30889

### Great Britain

Cooper Watson Communication  
*Distributor*  
47 Grovebury Court  
Wootton Beds  
MK43 9HZ  
Phone +44-1234-3117 37  
Fax +44-1234-29 36 74  
Admin@cooper-watson.co.uk  
www.cooper-watson.co.uk

### Lithuania

LATVEL Ltd.  
*Distributor*  
Kr. Valdemara 118  
LV-1013 Riga/Latvia  
Phone +371-736 08 31  
Fax +371-737 19 61  
latvel@junik.lv · www.latvel.lv

### Latvia

LATVEL Ltd.  
*Distributor*  
Kr. Valdemara 118  
LV-1013 Riga  
Phone +371-736 08 31  
Fax +371-737 19 61  
latvel@junik.lv · www.latvel.lv

### Norway

Esma Försäljnings AB  
*Representative*  
Box 8027  
S-16308 Spanga  
Sweden  
Phone +46-8-474 42 31  
Fax +46-8-474 42 30  
angelika.andersson@esma.se  
www.esma.se

### Austria

Novitronic GmbH  
Elektronische Bauelemente  
*Representative*  
Grawatschgasse 4  
A-1230 Wien  
Phone +43-1-665 25 25  
Fax +43-1-665 25 24  
info@novitronic.co.at

### Russia South

GeRo  
*Distributor*  
Pushkinskaya ul. 70/Office 107  
RU-344007 Rostov on Don  
Phone +7-8632-559 709  
Fax +7-8632-559 710  
yg@gero.ru  
www.gero.ru

### Sweden

Esma Försäljnings AB  
*Representative*  
Box 8027  
S-16308 Spanga  
Phone +46-8-474 42 31  
Fax +46-8-474 42 30  
angelika.andersson@esma.se  
www.esma.se

### Switzerland

Novitronic AG  
Elektronische Bauelemente  
*Representative*  
Thurgauerstr. 74  
CH-8050 Zürich  
Phone +41-1-306 91 91  
Fax +41-1-306 91 81  
info@novitronic.ch  
www.novitronic.ch

### Slovakia

R.D. Engineering, s.r.o.  
*Distributor*  
Strossova 86  
CZ-53003 Pardubice 3  
Czech Republic  
Phone +42-0-466 613 860  
Fax +42-0-466 613 869  
rde@rde.cz  
www.rde.cz

### Czech Republic

R.D. Engineering, s.r.o.  
*Distributor*  
Strossova 86  
CZ-53003 Pardubice 3  
Phone +42-0-466 613 860  
Fax +42-0-466 613 869  
rde@rde.cz · www.rde.cz

MAXWARE, s.r.o.,

*Distributor*

Železničního pluku 1707  
CZ-530 03 Pardubice  
Phone +42-0-466 500 357  
Fax +42-0-466 500 356  
biza@maxware.cz  
www.maxware.cz

## Overseas

### Japan

Hideki Nakajima  
*Distributor*  
1-5-16 Midorigaoka, Ageo-shi  
Saitama-Ken, 362-0015  
Japan  
Phone +81-24-774-7335



**Holmberg GmbH & Co. KG · Electroacoustics**

Ohlauer Str. 5-11 · 10999 Berlin · Germany · Phone +49-30-617 80-0

Fax +49-30-617 80-200 · [info@holmco.de](mailto:info@holmco.de) · [www.holmco.de](http://www.holmco.de)

