



## CODA Audio Loudspeaker weather protection versions

CODA Audio Loudspeakers are available as standard or as special treated versions for different type of applications and environmental conditions.

### Version definitions

<b>Standard</b>	conventional cabinet specification
<b>Standard IP55</b>	conventional cabinet specification + fixed cable or amphenol connectors minimum ingress protection rate of IP55
<b>MG1</b>	Marine Grade 1. Sealed crossover, stainless steel screws, grill with weatherproof fabric and cathaphoresis coating, fixed cable or amphenol connectors, minimum ingress protection rate of IP55

### Weather protection versions

#### Standard IP55

Standard IP55 enables a permanent outdoor operation of CODA Audio Loudspeaker systems. These versions are visually and acoustically compatible to the standard versions. A physical protection against direct exposure to the elements is recommended. Minimum ingress protection rate of IP55.

#### MG1 – Marine Grade 1

MG1 provides the highest grade of environmental protection and can withstand outdoor operation in high humidity, wet, acid or salty environments. This version is visually and acoustically compatible to the Standard and Standard IP55 versions. A physical protection against direct exposure to the elements is recommended. Minimum ingress protection rate of IP55.



## Mechanical design, materials and coatings

Standard and Standard IP55

Arrayed products and their accessories:

Metal parts are KTL finished and powder coated.

Cathodic dip coating is the perfect combination of corrosion protection, surface quality, and the protection of the environment. KTL provides the products of Coda with a long-term corrosion protection, high resistance to mechanical damage and resistance to salt water and chemicals. CODA Audio applies powder coating on the KTL-treated surface and epoxy powder primer (3 layers). Powder coating provides an additional mechanical durability, UV resistance and serves as a perfect barrier against moisture.

(AiRAY, CiRAY, ViRAY, N-RAY, TiRAY, APS, N-APS, SCP-F, SCV-F, SC2-F, SCN-F, APS-SUB, N-SUB, TiLOW)

Accessories for D; G; HOPS; HOPS-Pro; U-Sub Series use phosphate + double powder coating (powder primer + powder paint)

MG1 – Marine Grade 1

Metal parts are KTL finished and powder coated.

Cathodic dip coating is the perfect combination of corrosion protection, surface quality, and the protection of the environment. KTL provides the products of Coda with a long-term corrosion protection, high resistance to mechanical damage and resistance to salt water and chemicals. CODA Audio applies powder coating on the KTL-treated surface and epoxy powder primer (3 layers). Powder coating provides an additional mechanical durability, UV resistance and serves as a perfect barrier against moisture. Grill with cataphoresis coating and weatherproof acoustical mesh. Stainless steel screws. All accessories have cataphoresis and double powder coating (powder primer + powder paint).

Cataphoresis coating advantages are long life corrosion resistance. salt spray test (ISO 9227 - ASTM B117) -750h

The PCB board (like the internal crossover) with the electronic parts is completely covered with a flexible solvent-based silicone-rubber coating. The coating is flexible at low (-40 °C) and high temperatures (+180 °C)

Enclosures

Wooden enclosures are made of plywood for exterior use conforming to DIN 68705 Part 3/BFU 100 standard requirements and Russian GOST 3916.1-96.

Waterproof glue class D3 is used confirming to EN204. Wooden enclosures are finished with highly reactive polyurea prepolymer which does not react with moisture. Polyurea is absolutely waterproof, strongly bonding and elastic. The coating is far superior to conventional coatings due to its high elasticity and excellent adhesion properties.



## Additional product description

- CoRAY4(i)

The bass reflex port at Standard IP55 and MG1 versions is protected by a grill which is covered with a weather proof mesh (no handle).

- D5-Tube

Grill produced from stainless steel 304L / 1.4307  
Available as Standard and MG1 version only

- D5-Cube

Available as Standard and MG1 version only

Note: D5-Cube and D5-Tube MG1 version have a sealed enclosure, without bass reflex ports

- KTV Soundbar

Standard IP55 and MG1 version have bass reflex ports covered with acoustical mesh. IP55 can only be achieved by placing cabinet with bass reflex ports pointing down

- OMNIO5

OMNIO5 is MG1 by default

The materials are anodized aluminum, finished with 2K high-solid polyurethane paint, pretreated with epoxy-powder primer. Aluminum Grill with weatherproof mesh.

- Cone loudspeaker coating

Waterproof treatment on both sides of the cone is applied as standard at all versions.

The coating provides excellent flowing properties and forms a soft-elastic, transparent water-resistant layer. The coating is emulsion-based adhesive containing plasticizer.

-Further weatherproof options on request

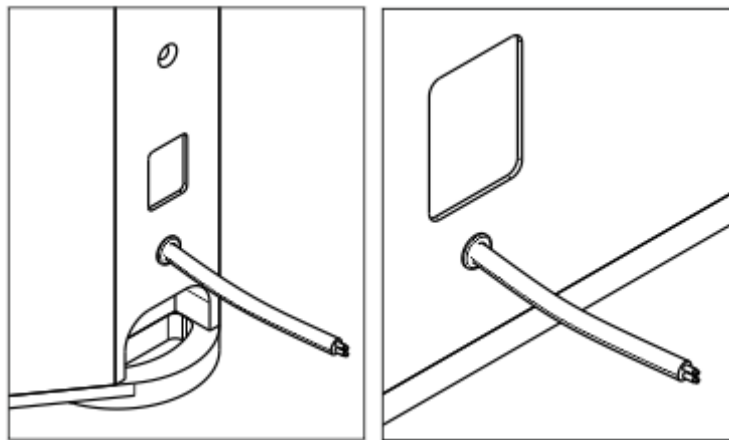


## Connector and cables

### Fixed loudspeaker cables

Fixed loudspeaker cables with the length of 1m (3.28 ft) are provided at the following Standard IP55 and MG1 version loudspeaker series and systems:

- D-Series
- G-Series
- HOPS-Series
- HOPS-Pro Series
- CoRAY4i-Series
- OMNIO5 (Standard version)
- U12, U12i, U15, U4, G15-Sub, G18-Sub



(example shows HOPS8i and G18-Sub, as Standard IP55 and MG1 version)

Cable wiring:

Red -> +1

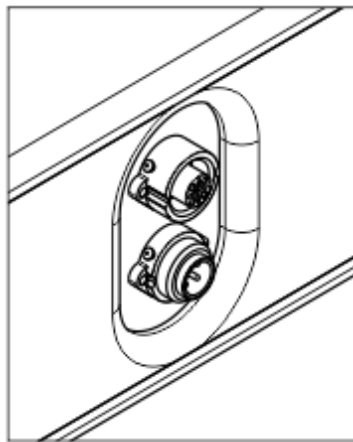
Black (or Blue) -> -1



## Industrial grade connector

1. Industrial grade input and link connectors are provided at the following Standard IP55 and MG1 version loudspeaker series and systems:

- N-APS
- N-SUB
- APS
- APS-SUB
- TiLOW



(Example shows APS as Standard IP55 and MG1 version)

## Connector Specification

Input: Amphenol C01620C00310012

(Input signal cable connector - Amphenol C01620D00310010, not included)

Link: Amphenol C01620G00310012 (supplied with protective cover cap)

(Link signal cable connector – Amphenol C01620H00310012, not included)

## Input Pin Wiring:

1 -> +1

2 -> -1

3 -> +2

G -> -2

## Link Pin Wiring:

1 -> +1

2 -> -1

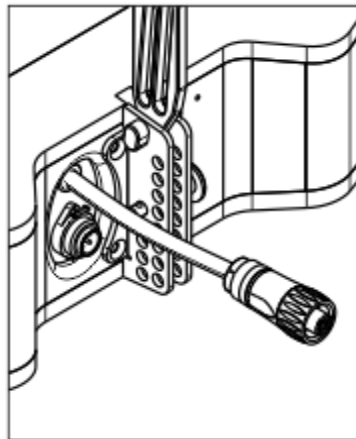
3 -> +2

G -> -2



2. Industrial grade input and link cable connectors are provided at the following Standard IP55 and MG1 version loudspeaker series and systems:

- TiRAY
- N-RAY
- ViRAY
- CiRAY
- AiRAY



(Example shows N-RAY as Standard IP55 and MG1 version)

## Connector Specification

Input: Amphenol C01620C00310012

(Input signal cable connector - Amphenol C01620D00310010, not included)

Link: Amphenol C01620D00310010 (supplied with protective cover cap)

## Input Pin Wiring:

1 -> +1

2 -> -1

3 -> +2

G -> -2

## Link Pin Wiring:

1 -> +1

2 -> -1

3 -> +2

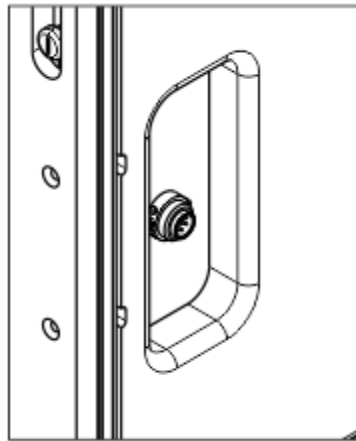
G -> -2



3. Industrial grade input and sensor connectors are provided at the following Standard IP55 and MG1 version loudspeaker series and systems:

- SC2-F
- SCP
- SCP-F

The mentioned loudspeakers have no input and sensor connectors on the grill



(Example shows SC2-F on Standard IP55 and MG1 version)

## Connector Specification

Input: Amphenol C01620C0051002

(Input signal cable connector - Amphenol C01620E0051032, not included)

## Pin Wiring:

1 -> +1

2 -> -1

3 -> Not Connected

4 -> Sensor +

5 -> Sensor -

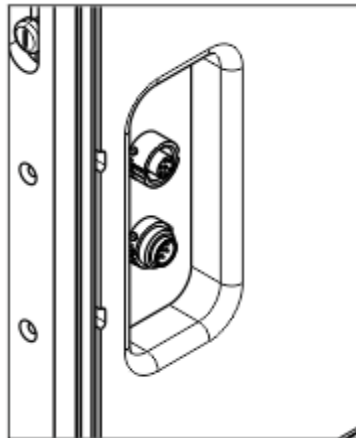
PE -> Ground



4. Industrial grade input, sensor and link connectors are provided at the following Standard IP55 and MG1 version loudspeaker series and systems:

- SCN-F
- SCV-F

The mentioned loudspeakers have no input and sensor connectors on the grill



(Example shows SCV-F on Standard IP55 and MG1 version)

## Connector Specification

Input: Amphenol C01620C0051002

(Input signal cable connector - Amphenol C01620E0051032, not included)

Link: Amphenol C01620G0051002 (supplied with protective cover cap: Amphenol C01600V0000012 )

(Link signal cable connector – Amphenol C01620I0051032, not included)

## Input Pin Wiring:

- 1 -> +1
- 2 -> -1
- 3 -> Not Connected
- 4 -> Sensor +
- 5 -> Sensor -
- PE -> Ground

## Link Pin Wiring:

- 1 -> +1
- 2 -> -1
- 3 -> Not Connected
- 4 -> Not Connected
- 5 -> Not Connected
- PE -> Not Connected





## IP Rating and features overview on Standard, Standard IP55 and MG1 version

CODA Audio Products listed below are fully compliant with the Ingress protection, IP classification as defined in the international standard IEC 60529.

Product	Standard IP-Rate	Standard IP55, MG1 IP-Rate	Fixed Loudspeaker cable	Amphenol connectors	Sealed crossover	Closed bassreflex port	Standard grill/ acoustical foam/ cloth	Kataforese Grill/ Weatherproof cloth	Stainless steel screws
D5 Cube	23	56 <sup>3</sup>	Standard IP55, MG1	-	Standard IP55, MG1	Standard IP55, MG1	Standard, Standard IP55	MG1	MG1
D5 Tube	13	56 <sup>3</sup>	Standard IP55, MG1	-	Standard IP55, MG1	Standard IP55, MG1	Standard, Standard IP55	MG1	MG1
D8	54	55 <sup>1</sup>	Standard IP55, MG1	-	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
D10	54	55 <sup>1</sup>	Standard IP55, MG1	-	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
D16	54	55 <sup>1</sup>	Standard IP55, MG1	-	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
D12	54	55 <sup>1</sup>	Standard IP55, MG1	-	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
D20	54	55 <sup>1</sup>	Standard IP55, MG1	-	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
G308-Pro	54	55 <sup>2</sup>	Standard IP55, MG1	-	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
G512-Pro	54	55 <sup>2</sup>	Standard IP55, MG1	-	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
G515-Pro	54	55 <sup>2</sup>	Standard IP55, MG1	-	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
G712-Pro	54	55 <sup>2</sup>	Standard IP55, MG1	-	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
G715-Pro	54	55 <sup>2</sup>	Standard IP55, MG1	-	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
G15 SUB	54	55 <sup>1</sup>	Standard IP55, MG1	-	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
G18 SUB	54	55 <sup>1</sup>	Standard IP55, MG1	-	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
HOP55	54	55 <sup>2</sup>	Standard IP55, MG1	-	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
HOP57-Pro	54	55 <sup>1</sup>	Standard IP55, MG1	-	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
HOP58i / T	54	55 <sup>2</sup>	Standard IP55, MG1	-	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
HOP510-Pro i / T	54	55 <sup>1</sup>	Standard IP55, MG1	-	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
HOP512i / T	54	55 <sup>1</sup>	Standard IP55, MG1	-	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
CoRAY4/L /i /Li	54	55 <sup>5</sup>	Standard IP55, MG1	-	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
AIRAY	54	55 <sup>1</sup>	-	Standard IP55, MG1	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
CIRAY	54	55 <sup>1</sup>	-	Standard IP55, MG1	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
VIRAY	54	55 <sup>1</sup>	-	Standard IP55, MG1	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
N-RAY	54	55 <sup>1</sup>	-	Standard IP55, MG1	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
TIRAY	54	55 <sup>1</sup>	-	Standard IP55, MG1	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
SCV-F	54	55 <sup>1</sup>	-	Standard IP55, MG1	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
SC2-F	54	55 <sup>1</sup>	-	Standard IP55, MG1	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
SCN-F	54	55 <sup>1</sup>	-	Standard IP55, MG1	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
TiLOW	54	55 <sup>1</sup>	-	Standard IP55, MG1	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
APS	54	55 <sup>1</sup>	-	Standard IP55, MG1	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
APS-SUB	54	55 <sup>1</sup>	-	Standard IP55, MG1	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
N-APS	54	55 <sup>1</sup>	-	Standard IP55, MG1	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
N-SUB	54	55 <sup>1</sup>	-	Standard IP55, MG1	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
SCP-F	54	55 <sup>1</sup>	-	Standard IP55, MG1	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
SCP	54	55 <sup>1</sup>	-	Standard IP55, MG1	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
U4	54	55 <sup>1</sup>	Standard IP55, MG1	-	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
U12	54	55 <sup>1</sup>	Standard IP55, MG1	-	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
U12i	54	55 <sup>1</sup>	Standard IP55, MG1	-	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
U15	54	55 <sup>1</sup>	Standard IP55, MG1	-	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
KTV-Soundbar	03	55 <sup>4</sup>	Standard IP55, MG1	-	Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1
OMNIO5	56	-	Standard, Standard IP55, MG1	-	Standard, Standard IP55, MG1	-	Standard, Standard IP55	MG1	MG1

<sup>1</sup> Product with zero or down tilting angles

<sup>2</sup> Product in horizontal position with zero or down tilting angles

<sup>3</sup> Available only as Standard or MG1 version

<sup>4</sup> Bass reflex openings must show downwards to achieve IP55

<sup>5</sup> Product in vertical position with zero or up tilting angles