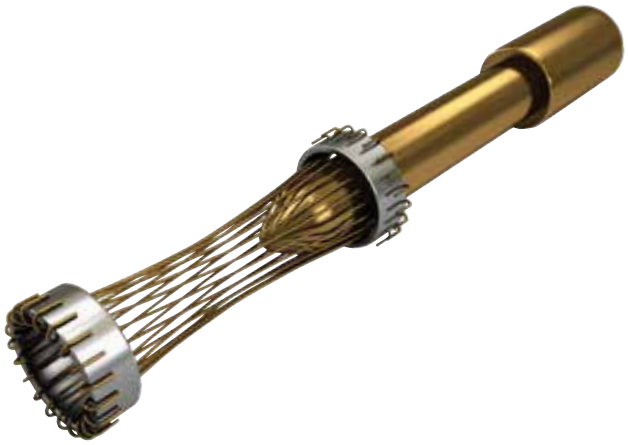
smiths interconnect

BOA Series

Heavy Duty Connectors for Balise System

Available Contact Technologies *(Features & Benefits)*

Hypertac® Hyperboloid contact



- **Long Contact Life**
  Industry-leading mating cycles (over 100,000) provide low cost of ownership
- **Low Insertion / Extraction Forces**
  Ergonomic mating without mate assist hardware for cost and space saving
- **Lower Contact Resistance**
  Low power consumption / lower voltage drop across connector
- **Higher Current Ratings**
  Smaller contacts needed to carry power reduce size and weight
- **Immunity to Shock & Vibration**
  Reliability under harsh environmental conditions
- **360º Contact Wipe**
  Self-cleaning contacts assure uninterrupted connection
- **Restricted materials**
  RoHS compliant with Exemption 6c

Tortac® contact

- **High density**
  Smaller pitch with equivalent mechanical and electrical properties of Hypertac® hyperboloid contact
- **High current in same pitch**
  Higher current handling vs. pitch: compared to Hyperboloid contact, for the same external socket diameter, a pin with a larger diameter can be used so that it hands higher current

  Finite element analysis approach
  Single piece design that allows FEA instead of "trial & error" approach for new designs
- **Contact Life**
  Industry-leading mating cycles (over 10,000) provide low cost of ownership
- **Harsh environments**
  Immunity to Shock & Vibration and high resistance to salt spray
- **Restricted materials**
  RoHS compliant with Exemption 6c

BOA Series for balise system

Heavy Duty Transponder for Eurobalise System

Features & Benefits

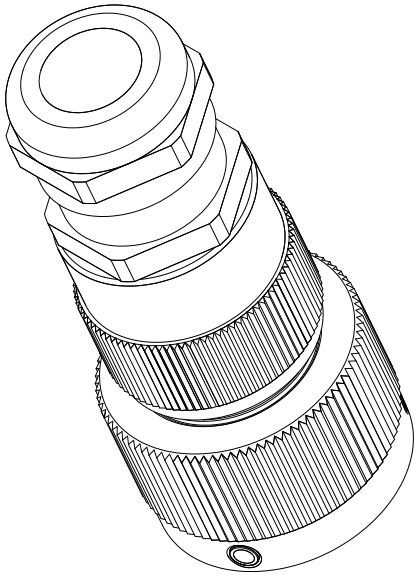
- Excellent data transmission and reliable signal integrity thanks to the use of the world class Hypertac® Hyperboloid contact
- Special alloys and conductive plating to resist under harsh environment conditions along railway tracks
- Bayonet locking system for easy maintenance and download/upload of data into and from the balise
- Metal shell with conductive plating for shielding purpose
- Self extinguishing or not flammable insulator, smoke-halogen free with high dielectric withstanding voltage
- Vibration tests compliant to MIL-STD-1344 method 2004 cond. III
- IP67 protection, salt water mist tested
- Compliant to VG95234, MIL-C-26482

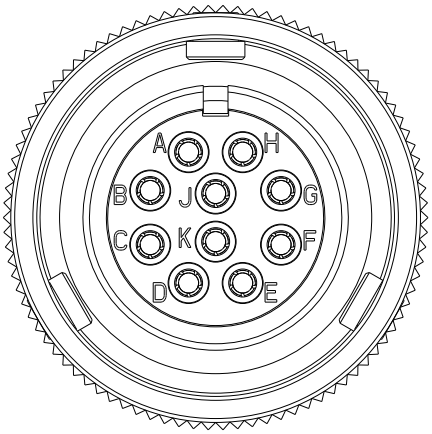
Technical Characteristics

Number of contacts	10
Contact diameter	1.42 mm
Contact technology	Hyperboloid
Electrical	
Nominal Contact Current	5A
Working Voltage	500 V a.c. – 700 V d.c.
Temperature Range	- 40°C + 85 °C
Insulator Resistance	5 GOhm with 500 V d.c.
Contact Resistance	< 50 mOhms

Plug with socket contacts *(supplied not assembled)*

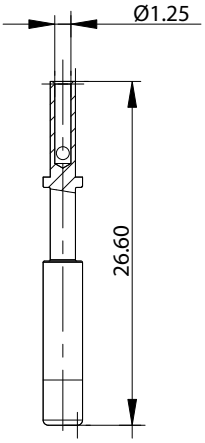
Order ref: 22183





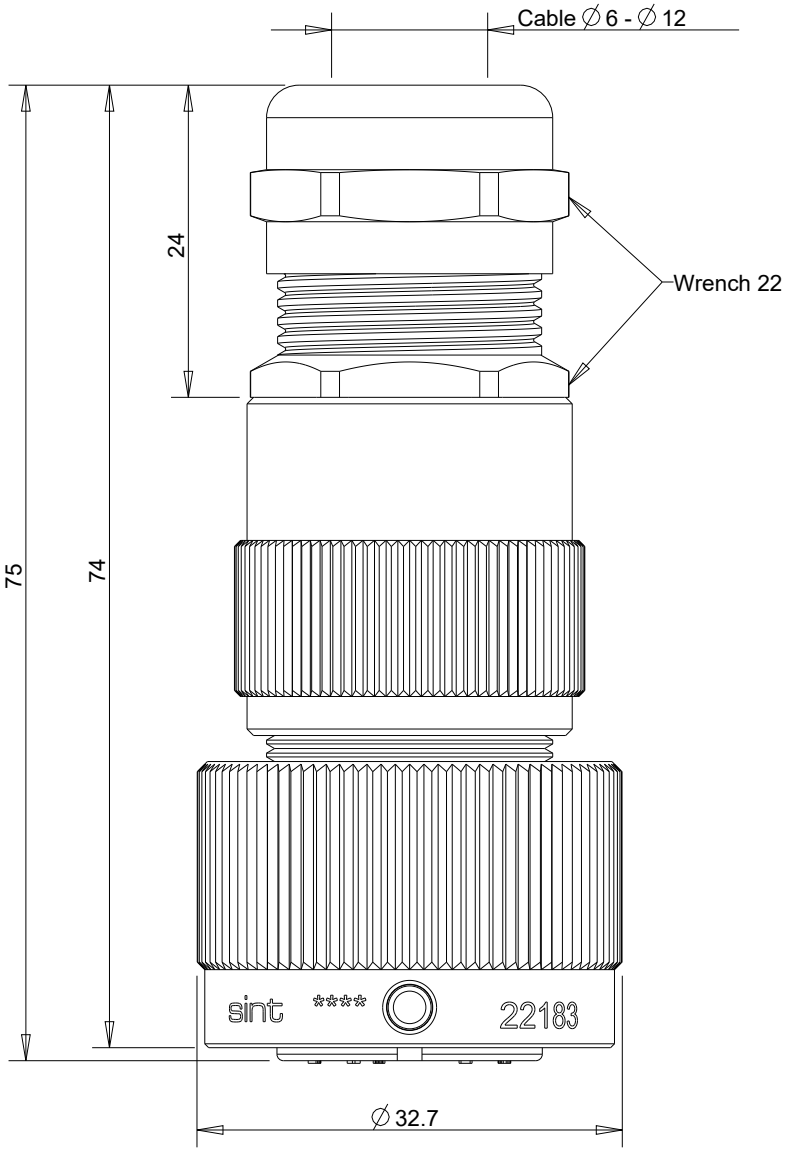
SCALE 1:1

CONTACT POSITION	X tol.±0.2	Y tol.±0.2
A	-2.08	5.03
B	-5.03	2.08
C	-5.03	-2.08
D	-2.08	-5.03
E	2.08	-5.03
F	5.03	-2.08
G	5.03	2.08
H	2.08	5.03
J	0.00	1.85
K	0.00	-1.85



SOCKET CONTACT HC1.42 MM
Order ref: 22204 Z66

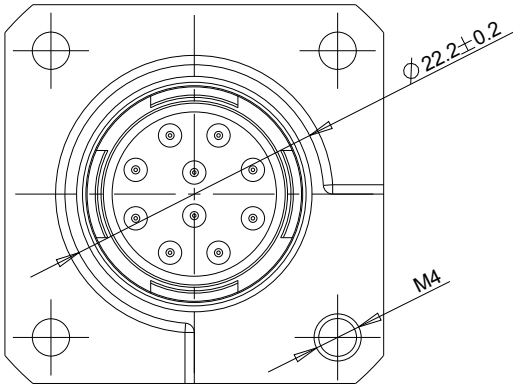
Crimp termination AWG 24-20
Stripping lenght 6.7-7.1 mm
Crimping tool M22520/1-01 (AF8)
Turret Daniels TP 1034
Insertion/extraction tool 22274

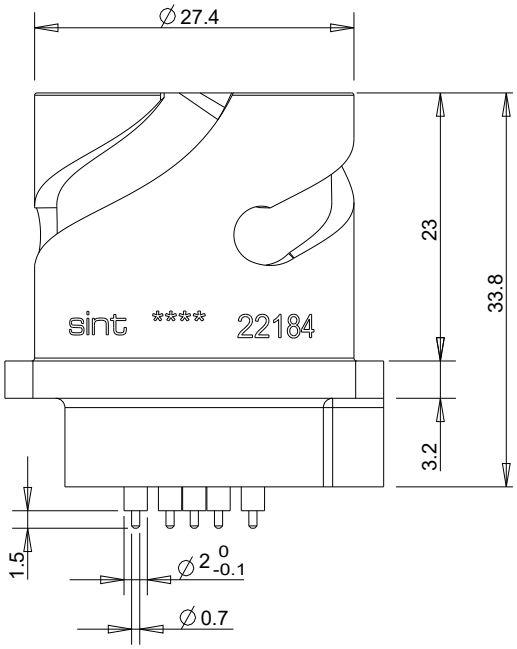


Dimensions are in mm

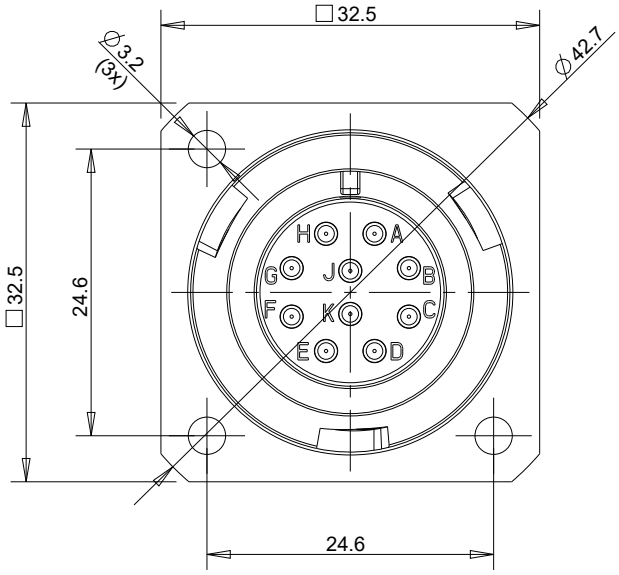
Receptacle with pin contacts

Order ref: 22184





CONTACT POSITION	X tol.±0.2	Y tol.±0.2
A	2.08	5.03
B	5.03	2.08
C	5.03	-2.08
D	2.08	-5.03
E	-2.08	-5.03
F	-5.03	-2.08
G	-5.03	2.08
H	-2.08	5.03
J	0.00	1.85
K	0.00	-1.85



BOA Series with anti-tampering option

Specifically designed for the compact size and the advanced technical features of the Eurobalise system, the BOA series ensures an excellent data transmission and a reliable signal integrity.

Features & Benefits

- Available with Hypertac® Hyperboloid or Tortac® contact technologies depending on the number of ways
- Bayonet locking system with anti-tampering mechanism for easy maintenance and to avoid sabotages
- Plug version: easy download/upload of data into and from the balise
- Colored jumper versions: red, black, green, orange, yellow depending on the function
- Special plating to resist contamination under harsh environmental conditions along railway tracks
- Excellent transmission of data between the rail track and train borne equipment

Technical Characteristics

	BOA
Number of contacts	from 7 to 37 with same shell size
Contact diameter	1 mm
Contact technology	Hyperboloid or Tortac®
Materials	
Connector body	Aluminium alloy
Terminations	
Receptacle contact termination	Straight PCB, Solder cup
Plug contact termination	Solder cup, Dip solder
Mechanical	
Connector life	5000 mating cycles according to EIA 364.09
Electrical	
Current Rating	5A @ 25 C° for each contact according to IEC 512-3
Contact Resistance	< 5 mΩ for each contact according to EIA 364

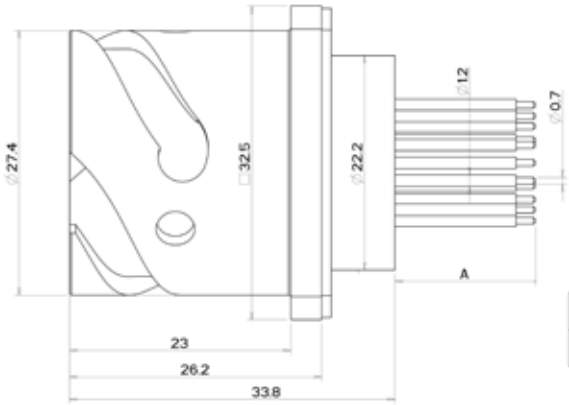
Plug & Receptacle Dimensions

Receptacle

13 ways

21 ways

37 ways

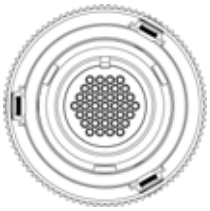


	C[mm]	L[mm]
A	3.55	14.6

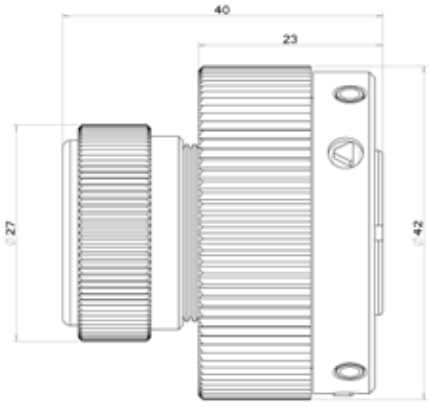
Jumper & Plug

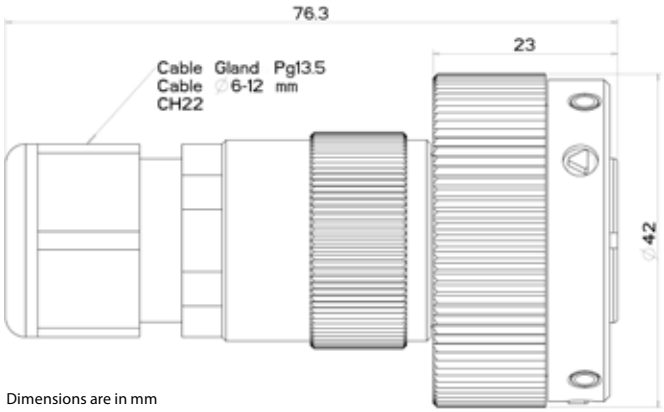
13 ways

21 ways



37 ways





Dimensions are in mm

How To Order

BOA Series for Eurobalise system

Plug	order ref. 22183
Receptacle	order ref: 22184

BOA Series with anti-tampering option

S T 1 0 9 7	C - B A L I S E	* *	*	*	C * *	C H * *
1	2	3	4	5	6	7

1 Specification	Fixed
2 Series	Fixed
3 Number of ways*	From 0 7 to 3 7
4 Connector type	R Receptable panel mounting P Plug J Jumpered & overmoulded plug D C Dust Cap for receptacle
5 Termination style *(omit if not applicable)*	S Solder Cup L PCB straight (L= 13.00 mm) D PCB straight (L= 3.55 mm) Not applicable
6 Housing - color code *(omit if not applicable)*	C 0 0 Red C 0 1 Yellow C 0 2 Orange C 0 3 Green C 0 4 Blue C 0 5 Black Not applicable
7 Wiring diagram *(omit if not applicable)*	From C H 0 1 to C H n n

* *from 7 to 13 ways use hyperboloid contacts, >13 ways are equipped with Tortac® contacts*

** *configurations with 13 and 21 ways available. For other configurations please contact the factory.*

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