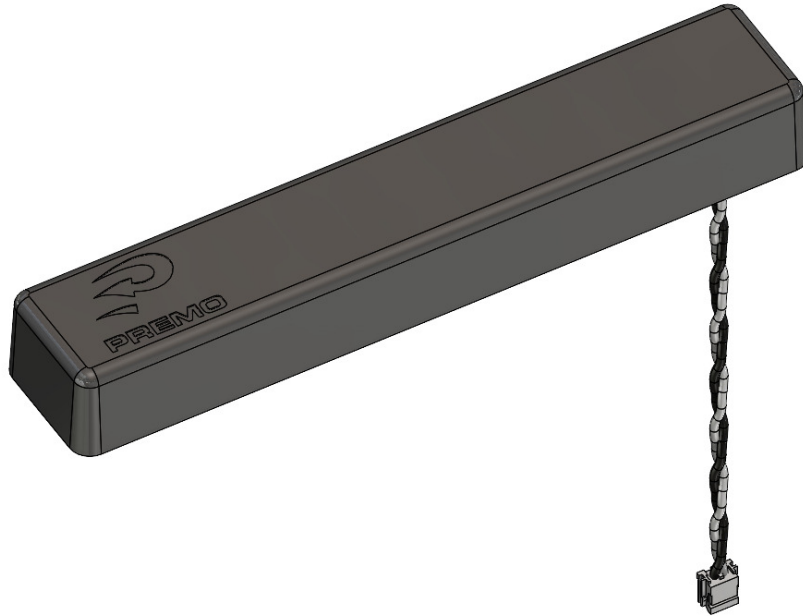
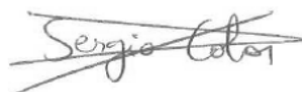



	Customer Amazon Robotics	Customer (P/N) 190-01689	Description LF Antenna 715μH 3x6.8nF 125kHz 147x27x18mm		
	Premo (P/N) X-13043-003R1	Prototype Ref.	Date 2022.08.02	Edition 7	Page 1/8



LF Antenna 715μH 2.2nF 125kHz 147x27x18mm

Made by: S. Cobos	Checked by: José Ramón Fdez	Approved by: J. Muñoz
Date: 2022.08.02	Date: 2022.08.02	Date: 2022.08.08
Signature: 	Signature: 	Signature: 



	Customer Amazon Robotics	Customer (P/N) 190-01689	Description LF Antenna 715μH 3x6.8nF 125kHz 147x27x18mm		
	Premo (P/N) X-13043-003R1	Prototype Ref.	Date 2022.08.02	Edition 7	Page 2/8

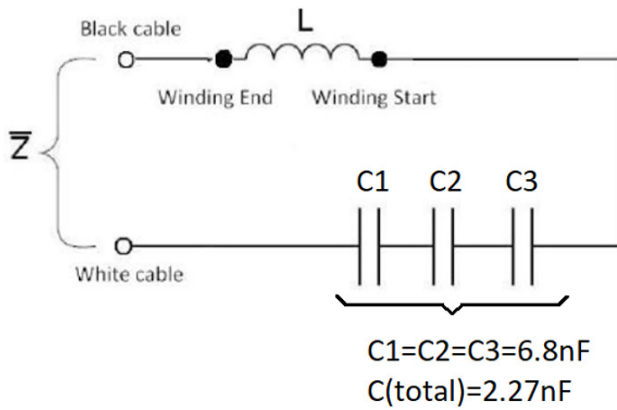
1. Applications

- Reader Emitter antenna (Low Frequency)

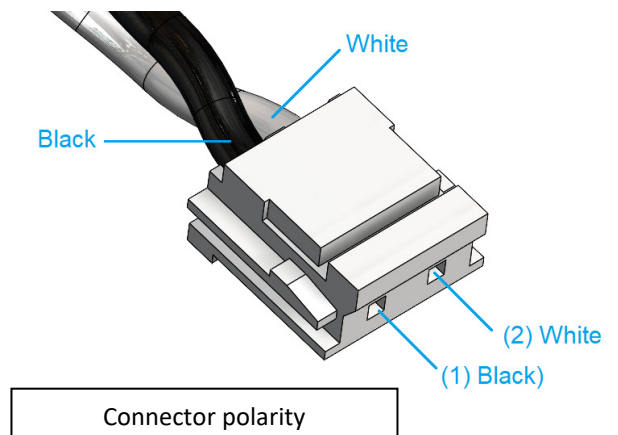
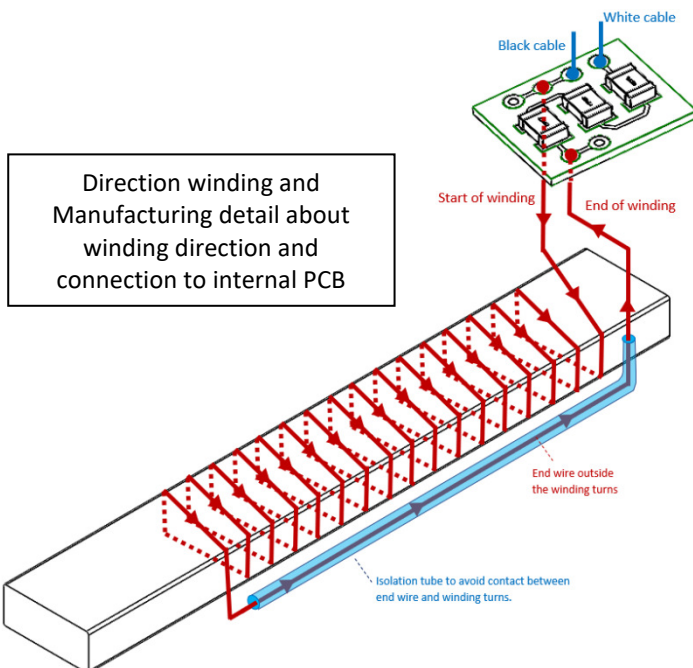
2. Characteristics

- Transmitting low frequency LF
- High stability in temperature (-20° up to +85°)
- Long reading distance and current max. 4 App.

3. Electrical diagram and constructive internal details

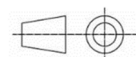



L: Ferrite core coil inductance
C: Tuning internal capacitor
Z: External impedance.



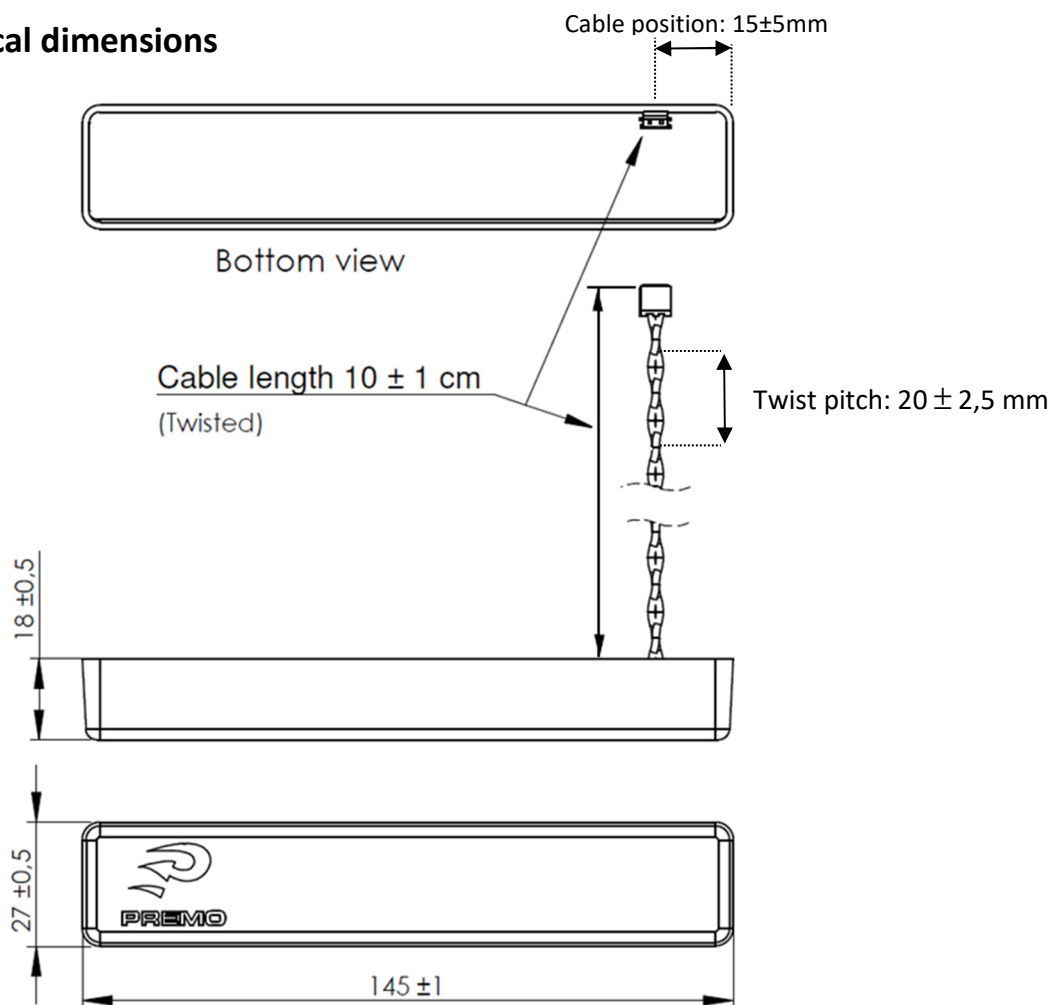
Dimensions: mm

(*) Critical characteristics



	Customer Amazon Robotics	Customer (P/N) 190-01689	Description LF Antenna 715µH 3x6.8nF 125kHz 147x27x18mm		
	Premo (P/N) X-13043-003R1	Prototype Ref.	Date 2022.08.02	Edition 7	Page 3/8

4. Mechanical dimensions



Notes:

General tolerances according on ISO 2768 -- 1 m if not defined

Weight: 190 gr (typ.) 200 gr. (Max.)

5. Electrical parameters

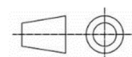
SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS	REMARKS
L	Inductance	@125kHz, 25°C, 1Vac	667.3	715.0	766.4	µH	(*)
C	Capacitor	@25°C, 1Vac	2.15	2.27	2.39	nF	
Q	Quality factor	@F ₀ , 25°C. 1Vac	140	-	-		
F ₀	Resonance frequency	@25°C, 1Vac	123.8	125.0	126.2	kHz	(*)
R _{ac}	AC Resistance	@F ₀ , 25°C. 1Vac	2	-	4	Ω	(*)
Z	Impedance	@125kHz, 25°C. 1Vac	2	-	11	Ω	(*)


Notes:

Measures at 25 ° C +/- 2 ° C

Dimensions: mm

(*) Critical characteristics



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	Premo (P/N) X-13043-003R1	Prototype Ref.	Date 2022.08.02	Edition 7	Page 4/8

6. Functional performances

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
Twork	Working temperature	-	-20	-	+85	°C
Tstorage	Storage temperature	-	-20	-	+85	°C
Imax	Maximum current	At Twork, F0	-	-	4	App

7. Raw materials

Ferrite core	MnZn ferrite
Wire	Enamelled copper wire 0.5mm Class H
External housing	PBT 30%GF
Shrink tube	Polyolefin tube
Isolation tube	PFTE flexible tube ID: 0.055mm
PCB	FR4 standard
Capacitors	3 x 6.8nF 1812 1kVDC Ceramic capacitors
Casting	CoolMag™
Cable	CSA high temperature
Connector	JST EHR-2 with SEH-001T-P0.6 contacts
Solder tin / Solder paste	RoHS compliant

8. Quality requirements

The parameters F_0 , R_{ac} and Z (at room temperature) must be 100% controlled.

The following tests have to be performed before release for series-production.

8.1. Storage test

Duration: 500 hours

Temperature: 85°C.

According on MIL-STD202 Method 108. Test condition C

8.2. Air shock test

Number of Cycles: 300 cycles

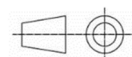
Low temperature: -20°C.


High temperature: +85°C

Transfer time: 10 s.

Dimensions: mm

(*) Critical characteristics



	Customer Amazon Robotics	Customer (P/N) 190-01689	Description LF Antenna 715μH 3x6.8nF 125kHz 147x27x18mm		
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8.3. Humidity storage

Duration: 504 hours

Temperature: 85°C.

Humidity: 95%

According on MIL-STD202 Method 10. Test condition C

8.3. Vibration test

Duration: 7 hours

Acceleration: 0.75G_{RMS}

Random Vibration

Frequency sweep: 350 Hz to 2000 Hz

Frequency rate: 1 octave per minute rate of change in X, Y and Z axis.

According on standard IEC 60068-2-64.

8.4. Shock test

Duration: 11ms

Acceleration: 7G

Pulse shape: Half sine.

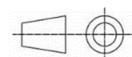
Conditions applied to all sides and bottom.


10 shocks per exposed side.

According on standard IEC 60068-2-27.

Dimensions: mm

(*) Critical characteristics

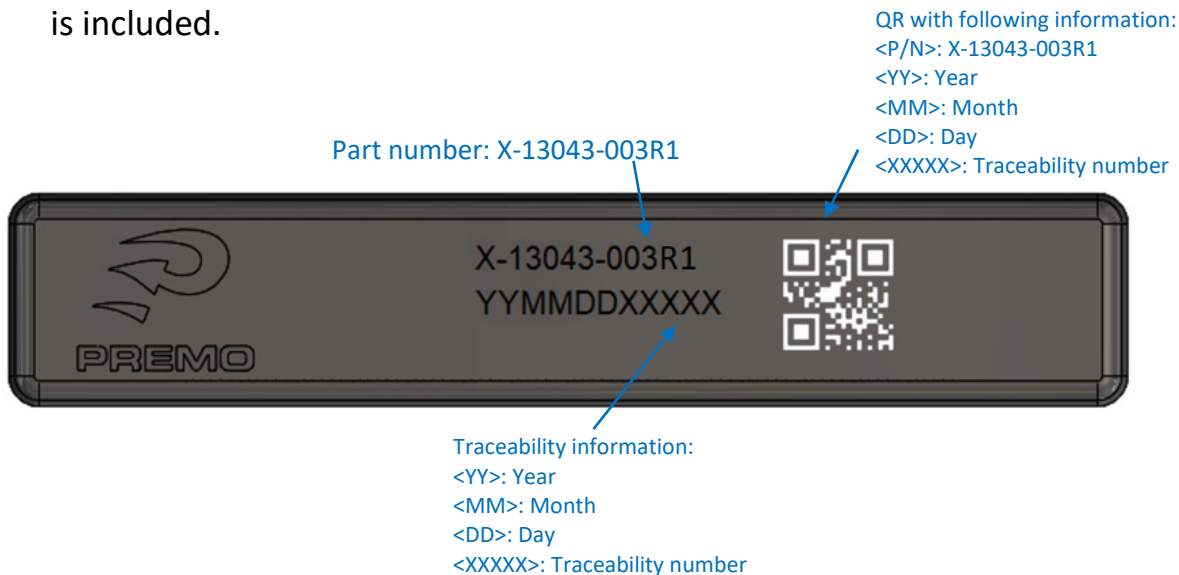


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9. Marking

9.1. Part labelling

Laser marking with following information, a QR version 3 (29x29 array) is included.

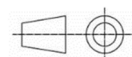



9.2. Package labelling

 GRUPO PREMO www.grupopremo.com		
PREMO P/N:  X-13043-003R1	PREMO PO:  1071234	
Customer P/N:  XXXXXXXX		
Date:  03/05/2021	Mat: XXXX	Quantity:  XXXX

Dimensions: mm

(*) Critical characteristics

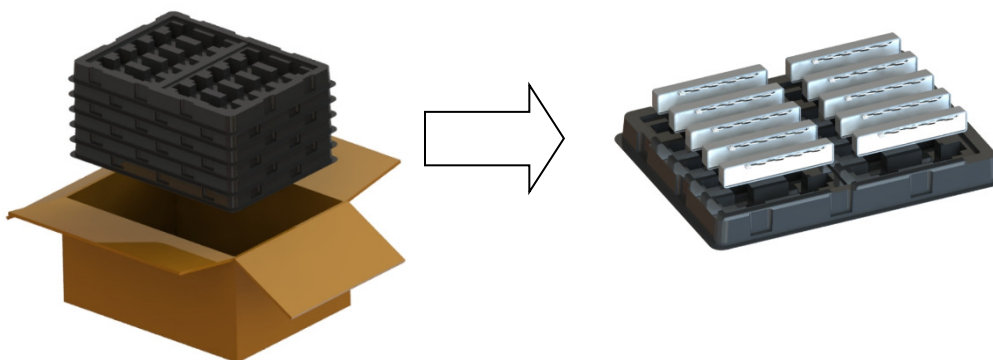


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	Premo (P/N) X-13043-003R1	Prototype Ref.	Date 2022.08.02	Edition 7	Page 7/8

10.Packaging

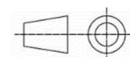
Parts in plastic trays and in boxes of 388x288x300mm (inside)
80 parts / carton box


(10 parts / tray) (8 trays + 1 empty tray per box)



Dimensions: mm

(*) Critical characteristics



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	Premo (P/N) X-13043-003R1	Prototype Ref.	Date 2022.08.02	Edition 7	Page 8/8

11. Edition Control

ED	CHANGE BY	DATE	CHANGE DESCRIPTION
1	S. Cobos	2022.05.11	Updated with 3 x 6.8nF 1kV capacitors from PRJ SPEC X-13043-003 7 th edition. Added capacitors in Raw Material Table (section 7). Added three capacitors in electrical diagram (section 3). Updated inductance to 715uH (according 3 x 6.8nF) in electrical parameters table (section 5). Updated P/N to X-13043-003R1 in labelling (section 9).
2	S. Cobos	2022.06.03	Updated resonance frequency tolerance to ±1.2kHz in section 5. Added max. Impedance at 125kHz (11 Ohms) in section 5. Updated capacitor nominal value to 2.27nF in section 5. Updated inductance range to 667.3-766.4uH in section 5.
3	S. Cobos	2022.06.08	Added manufacturing detail about winding direction and connection to internal PCB in section 3. Updated Rac to MIN: 2 Ω and Max: 4 Ω. Updated Z to MIN: 2 Ω and MAX: 11 Ω.
4	S. Cobos	2022.06.22	Added quality tests in section 8 including storage, air shock, humidity storage, vibration, and shock tests.
5	S. Cobos	2022.07.05	Updated hours from 1000 to 500 in storage test (section 8.1) according on MIL-STD202 Method 108 Test condition C. Updated hours from 1000 to 504 in humidity test (section 8.3) according on MIL-STD202 Method 103. Test condition C.
6	S. Cobos	2022.07.15	Added PFTE isolation tube in the ending wiring interior of the antenna in sections 3 and 7. Corrected PREMO S.L. in footprint of the document.
7	S. Cobos	2022.08.02	Updated winding direction in diagram of section 3.

Dimensions: mm

(*) Critical characteristics

