

BRADY L-2899-8A UHF temperature label

TDS No. L-2899-8A
Effective Date: 24/11/2020

Description:

UHF temperature label is a general-purpose temperature sensor that is designed to work across a wide variety of materials, providing both good read distance and sensing performance.

Details:

Material Specifications:

Face Material	B-423 - White Polyester
Adhesive	Permanent modified acrylic adhesive
Finishing	Glossy White
Antenna	Aluminium
IC to antenna construction	Chip bonded to antenna using Anisotropic Conductive Film adhesive
Tag base material	PET

General Specifications:

Applications	UHF temperature label for use outdoor and indoor, large read ranges, UV exposed environment. The antenna is designed for application on non-metal surfaces.
Print Technology	Thermal transfer print, including RFID encoding.
Recommended Ribbon	Brady Series R6000 Halogen Free
Operating Temperature	-40 °C to 85 °C
Regulatory/Agency Approvals	For information on the Weee-RoHS compliance status for a Brady Product go to one of the following websites: In Canada: www.bradycanada.ca/weee-rohs In Europe: www.bradyeurope.com/rohs In Japan: www.brady.co.jp/products/labelsuse/rohs All other regions: www.bradyid.com/weee-rohs

Electronic Specifications:

IC / Chip	RF Micron's Magnus® S3
Operating Frequency	860 - 960 MHz (ETSI band)
Supported Standard	ISO 18000-6C, EPC Class 1, Gen 2
EPC Memory	128 bits
User Memory	176 bits
TID Memory	64 bits

RFID Regularity:

- ISO 18000-6C
- EPC class 1 Gen2 compliant

important notice for reader use:

The reader must support the Select command that will cause the chip to calculate the on-chip temperature. This is within the scope of the EPC C1G2 protocol, however many reader manufacturers only expose high-level APIs for commonly used commands.

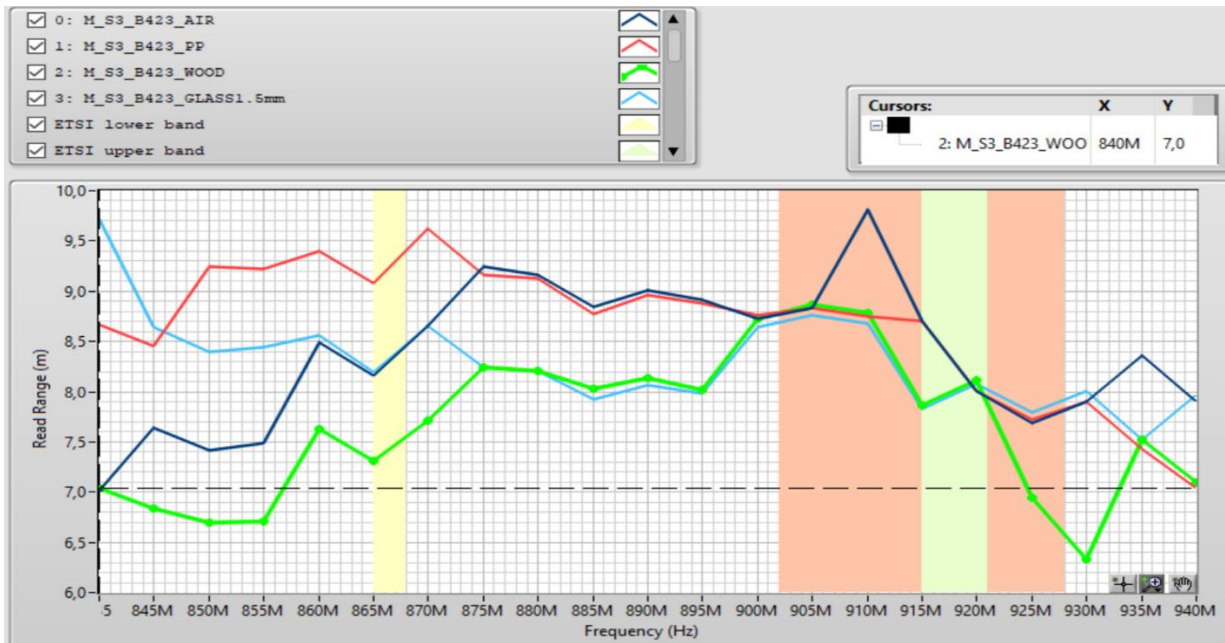
Temperature accuracy:

- Temperature range: absolute accuracy of $\pm 0.3\text{ }^{\circ}\text{C}$ in the range of $0^{\circ}\text{C} - 50^{\circ}\text{C}$ and $\pm 1.0\text{ }^{\circ}\text{C}$ in the range of $-40\text{ }^{\circ}\text{C} - 85^{\circ}\text{C}$ (with 2-point calibration)

Read Range

Details RFID performance in ETSI lower bandwidth:

PERFORMANCE PROPERTIES	TEST METHOD	TYPICAL RESULTS
RFID Read range in open air	CISC Tagformance test	up to 8m
RFID Read range on glass surface	CISC Tagformance test	up to 8m
RFID Read range on PP material	CISC Tagformance test	up to 9m
RFID Read range on wood	CISC Tagformance test	up to 7m



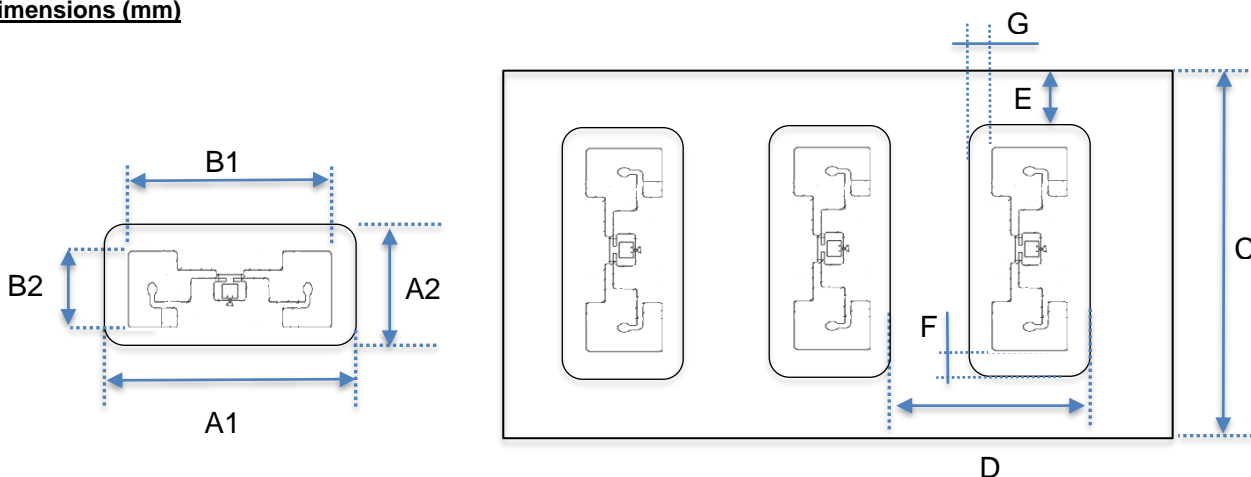
Label Dimensions:

Metric (mm)		
Width	Length	Thickness Total (with chip)
93.00	26.00	0.31

Label Mass (including antenna and chip)

Label Mass (g)
0.57

Dimensions (mm)



		Length (mm)	Tolerance (mm)
A1	Tag Width	93.00	+/- 0.2
A2	Tag Length	26.00	+/- 0.2
B1	Antenna Width	89.00	+/- 0.5
B2	Antenna Length	24.00	+/- 0.5
C	Web Width	103.00	+/- 0.5
D	Tag to Tag Pitch	29.99	+/- 1.5
E	Web edge to label	5.00	+/- 1.5
F	Antenna to side label	2.00	+/- 1.5
G	Antenna to top label	1.00	+/- 1.5

Delivery and Packaging Specifications

RFID labels per roll	500
Rolls in package	1
Winding	RFID labels out
Inspection and delivered tags	100% inspected, 500 good RFID labels per roll
Bad Tags Marked	Yes

Label Performance

Details:

PHYSICAL PROPERTIES	TEST METHODS	AVERAGE RESULTS
Thickness	ASTM D 1000 -Total (excluding liner)	0.0118 inch (0.31 mm)
Adhesion to: -Glass	ASTM D 1000 20 minute dwell 24 hour dwell	68 N/100mm (62 oz/inch) 90 N/100mm (82 oz/inch)
-Polypropylene	20 minute dwell 24 hour dwell	92 N/100mm (84 oz/inch) 88 N/100mm (81 oz/inch)

Performance properties tested on samples printed with the Brady Series R6000 Halogen Free ribbons. Printed samples were laminated to glass plate and allowed to dwell 24 hours before exposure to the indicated environments.

PERFORMANCE PROPERTIES		ENVIRONMENTAL RESISTANCE		
PERFORMANCE PROPERTIES	TEST METHODS	EFFECT TO LABEL ADHESION	EFFECT TO PRINT IMAGE	EFFECT TO CHIP
High Service Temperature	30 days at temperatures 85°C, 100°C, and 120°C	No visible effect	No visible effect	Readable
Low Service Temperature	30 days at temperatures -40°C and -80°C	No visible effect	No visible effect	Readable
Short Term High Service Temperature	5 minutes at 180°C	No visible effect	No visible effect	Readable
Humidity Resistance	30 days at 37°C, 95% relative humidity	No visible effect	No visible effect	Readable
UV Light Resistance	30 days in Xenon Test Chamber	No visible effect	No visible effect	Readable
Weatherability	ASTM G155, Cycle 1 30 days in QUV accelerated weathering tester	No visible effect	No visible effect	Readable
Abrasion Resistance	Taber Abraser, CS10 grinding wheels, 250 g/arm (Fed. Std. 191A, Method 5306), 150 cycles	No visible effect	Print still legible after 150 cycles	No effect to chip. Chip still readable after 150 cycles

PERFORMANCE PROPERTIES		CHEMICAL RESISTANCE		
Samples were printed with the Brady Series R6000 Halogen Free. Samples were laminated to glass panels and allowed to dwell 24 hours prior to testing. Testing was conducted at room temperature and consisted of 30 minutes immersions in the specified test fluid. After immersion, the samples were removed from the test fluid and the printed image rubbed 10 times with a cotton swab saturated with the test fluid. The rating scale below shows the effect to the quality of the print for each sample.				
CHEMICAL REAGENT	EFFECT TO PRINT/TOPCOAT WITHOUT RUB	EFFECT TO PRINT/TOPCOAT WITH RUB	EFFECT TO ADHESIVE	EFFECT TO CHIP
Ethanol	1	1	1	Readable
Toluene	1	5	1	Readable
Isopropyl Alcohol	1	1	1	Readable
DOT 4 Brake Fluid	1	3	1	Readable
Skydrol® 500B-4	1	2	1	Readable
Hydrochloric Acid 37%	1	1	1	Readable
Sodium Hydroxide 10%	1	1	1	Readable

Rating Scale:

- 1= no visible effect
- 2= slight smear or print removal, detectable but minimal smear
- 3= moderate smear or print removal (print still legible)
- 4= severe smear or print removal (print illegible or just barely legible)
- 5= complete print and/or topcoat removal
- NP= print removed prior to rub

Shelf Life:

Shelf life is two years from the date of receipt for this product as long as this product is stored in its original packaging in an environment below 80° F (27° C) and 60% RH. It remains the responsibility of the user to assess the risk of using this product. We encourage customers to develop testing protocols that will qualify a product's fitness for use in their actual application.

References:

Skydrol® is a registered trademark of the Monsanto Company
 ASTM: American Society for Testing and Materials (U.S.A.)
 All S.I. Units (metric) are mathematically derived from the U.S. Conventional Units

Note: All values shown are averages and should not be used for specification purposes.

Test data and test results contained in this document are for general information only and shall not be relied upon by Brady customers for designs and specifications, or be relied on as meeting specified performance criteria. Customers desiring to develop specifications or performance criteria for specific product applications should contact Brady for further information.

Product compliance information is based upon information provided by suppliers of the raw materials used by Brady to manufacture this product or based on results of testing using recognized analytical methods performed by a third party, independent laboratory. As such, Brady makes no independent representations or warranties, express or implied, and assumes no liability in connection with the use of this information.

WARRANTY

Brady products are sold with the understanding that the buyers will test them in actual use and determine for themselves their adaptability to their intended uses. Brady warrants to the buyers that its products are free from defects in material and workmanship, but limits its obligation under this warranty to replacement of the product shown to Brady's satisfaction to have been defective at the time Brady sold it. This warranty does not extend to any persons obtaining the product from the buyers. This warranty is in lieu of any other warranty, express or implied, including, but not limited to, any implied warranty of merchantability or fitness for a particular purpose, and of any other obligations or liability on Brady's part. Under no circumstances will Brady be liable for any loss, damage, expense, or consequential damages of any kind arising in connection with the use, or inability to use, Brady's products.

Copyright 2020 Brady Worldwide, Inc. | All Rights Reserved

Material may not be reproduced or distributed in any form without written permission.