2200 US Highway 27 South
Richmond, IN 47374
Tel: 1-800-52 ALPHA
Web: www.alphawire.com

# Customer Specification

# PART NO. FIT-221B-1IN

## Construction

| | |
|---|---|
| 1) Tubing Type | Heat Shrinkable Tubing |
| 2) Tubing Material | Cross Linked Polyolefin |
| 3) Minimum Supplied ID(In) | 1.000 |
| 4) Maximum Recovered ID (In) | 0.500 |
| 5) Nominal Recovered Wall Thickness(In) | 0.035 |
| 6) Color(s) | BLACK, BLUE, CLEAR |
| | |

## Applicable Specifications

| | | |
|---|---|---|
| 1) UL | Standard 224 (Except Clear) | |
| 2) CSA International | Standard 198 (Except Clear) | |
| 3) Other | AMS-DTL-23053/5 Class 1 (Except Clear) | |
| | AMS-DTL-23053/5 Class 2 (Clear Only) | |
| | | |

## Environmental

| | |
|---|---|
| 1) EU Directive 2011/65/EU(RoHS2): | |
| | All materials used in the manufacture of this part are in compliance with European Directive 2011/65/EU regarding the restriction of use of certain hazardous substances in electrical and electronic equipment. Consult Alpha Wire's web site for RoHS C of C. |
| 2) REACH Regulation (EC 1907/2006): | |
| | This product does not contain Substances of Very High Concern (SVHC) listed on the European Union's REACH candidate list in excess of 0.1% mass of the item. For up-to-date information, please see Alpha's REACH SVHC Declaration. |
| 3) California Proposition 65: | The outer surface materials used in the manufacture of this part meet the requirements of California Proposition 65. |
| | |

Downloaded from Arrow.com.

# Properties

| | | |
|---|---|---|
| **Physical & Mechanical Properties** | | |
| 1) Temperature Range | -55 to 135°C | |
| 2) Shrink Ratio | Approximately 2:1 | |
| 3) Full Recovery Temperature | 121 °C | |
| 4) Minimum Shrink Temperature | 90°C | |
| 5) Tensile Strength | 1500psi, Min | ASTM D638 |
| 6) Elongation | 200%, Min | ASTM D638 |
| 7) Low Temperature Flex(-55°C) | no cracking | AMS-DTL-23053 |
| 8) Heat Shock(250°C,4hrs) | no cracking | AMS-DTL-23053 |
| 9) Secant Modulus | $2.5x10^{4}$ psi, Min | ASTM D882 |
| 10) Longitudinal Change | +/-5% | AMS-DTL-23053 |
| 11) Specific Gravity(Colors) | 1.35, Max | ASTM D792 |
| Specific Gravity(Clear) | 1.00, Max | |
| 12) Shelf Life | 5 Years @ 18 to 35°C | |
| **Electrical Properties** | | |
| 1) Dielectric Strength | 500 V/mil, Min | ASTM D876 |
| 2) Volume Resistivity | $1x10^{14}$ ohm-cm, Min | ASTM D876 |
| **Chemical Properties** | | |
| 1) Water Absorption | 0.50%, Max | ASTM D570 |
| 2) Corrosion(0°C,16hrs) | no corrosion | AMS-DTL-23053 |
| 3) Fluid Resistance(23°C,24 Hrs) | 1000 PSI, Min | AMS-DTL-23053 |
| 4) Fungus Resistance | Pass | AMS-DTL-23053 |
| 5) Vacuum Outgassing - CVCM | 0.10%, Max | ASTM E595 |
| 6) Halogen Free | No | |
| 7) Lead Free | Yes | |

# Other

| Packaging |
|---|
| 200X4 FT, 75X4 FT, 250 FT |


www.alphawire.com

Alpha Wire
2200 US Highway 27 South
Richmond, IN 47374

Tel: 1-800-52 ALPHA



Although Alpha Wire (“Alpha”) makes every reasonable effort to ensure there accuracy at the time of publication, information and specifications described herein are subject to errors or omissions and to changes without notice, and the listing of such information and specifications does not ensure product availability.

Downloaded from Arrow.com.

Alpha provides the information and specifications herein on an “AS IS” basis, with no representations or warranties, whether express, statutory or implied. In no event will Alpha be liable for any damages (including consequential, indirect, incidental, special, punitive, or exemplary) whatsoever, even if Alpha had been advised of the possibility of such damages, whether in an action under contract, negligence or any other theory, arising out of or in connection with the use, or inability to use, the information or specifications described herein.

ALPHA WIRE - CONFIDENTIAL AND PROPRIETARY Notice to persons receiving this document and/or technical information. This document is confidential and is the exclusive property of ALPHA WIRE, and is merely on loan and subject to recall by ALPHA WIRE at any time. By taking possession of this document, the recipient acknowledges and agrees that this document cannot be used in any manner adverse to the interests of ALPHA WIRE, and that no portion of this document may be copied or otherwise reproduced without the prior written consent of ALPHA WIRE. In the case of conflicting contractual provisions, this notice shall govern the status of this document. ©2026 ALPHA WIRE - all rights reserved.

Downloaded from Arrow.com.

2200 US Highway 27 South
Richmond, IN 47374
Tel: 1-800-52 ALPHA
Web: www.alphawire.com

# EU/UK/China ROHS CERTIFICATE OF COMPLIANCE

To Whom It May Concern:

Alpha Wire Part Number: FIT-221B-1IN

FIT-221B-1IN, RoHS-Compliant Commencing With 12/1/2004 Production

Note: all colors and put-ups

This document certifies that the Alpha part number cited above, including all packaging materials, is manufactured in accordance with Directive 2011/65/EU of the European Parliament, better known as the RoHS Directive (commonly known as RoHS 2), with regards to restrictions of the use of certain hazardous substances used in the manufacture of electrical and electronic equipment. This certification extends to amending Directive 2015/863/EU which expanded the list of restricted substances to 10 items (commonly known as RoHS 3). This product also complies with UK - RoHS. The reader is referred to these Directives for the specific definitions and extents of the Directives. **No Exemptions are required for RoHS Compliance on this item**. Additionally, Alpha certifies that the listed part number is in compliance with China RoHS "Marking for Control of Pollution by Electronic Information Products" standard SJ/T 11364-2014. This product is also in compliance with China RoHS 2 per GB/T 26572-2011.

| **Substance** | **Maximum Control Value** |
|---|---|
| Lead | 0.1% by weight (1000 ppm) |
| Mercury | 0.1% by weight (1000 ppm) |
| Cadmium | 0.01% by weight (100 ppm) |
| Hexavalent Chromium | 0.1% by weight (1000 ppm ) |
| Polybrominated Biphenyls (PBB) | 0.1% by weight (1000 ppm) |
| Polybrominated Diphenyl Ethers (PBDE) , Including Deca-BDE | 0.1% by weight (1000 ppm) |
| Bis(2-ethylhexyl) phthalate (DEHP) | 0.1% by weight (1000 ppm) |
| Butyl benzyl phthalate (BBP) | 0.1% by weight (1000 ppm) |
| Dibutyl phthalate (DBP) | 0.1% by weight (1000 ppm) |
| Diisobutyl phthalate (DIBP) | 0.1% by weight (1000 ppm) |

The information provided in this document and disclosure is correct to the best of Alpha Wire's knowledge, information and belief at the date of its release. The information provided is designed only as a general guide for the safe handling, storage, and any other operation of the product itself or the one that it will become part of. The intent of this document is not to be considered a warranty or quality specification. Regulatory information is for guidance purposes only. Product users are responsible for determining the applicability of legislation and regulations based on their individual usage of the product.

Authorized Signatory for the Alpha Wire:



Dave Watson, Director of Engineering 9/4/2026

Alpha Wire
2200 US Highway 27 South
Richmond, IN 47374
Tel: 1-908-925-8000

Downloaded from Arrow.com.