Wirewound Resistors, Industrial Power, Vitreous Coated, Fixed Edgewound Tubular



FEATURES

- High temperature vitreous coating
- Complete welded construction
- Excellent stability in operation (< 3 % change resistance)
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free

RoHS COMPLIANT

HALOGEN FREE

GREEN (5-2008)

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	HISTORICAL MODEL	POWER RATING $P_{25\,°C}$ W	RESISTANCE RANGE Ω ± 5 %	RESISTANCE RANGE Ω ± 10 %	WEIGHT (typical) g
FVE0050	FVE-50	50	1.0 to 3.8	1.0 to 3.8	18
FVE0090	FVE-90	90	0.10 to 5.7	0.10 to 5.7	36
FVE0100	FVE-100	100	1.0 to 6.1	0.15 to 6.1	41
FVE0110	FVE-110	110	1.0 to 7.4	0.20 to 7.4	49
FVE0120	FVE-120	120	1.0 to 8.6	0.1 to 8.6	54
FVE0140	HLZ-140	140	0.08 to 9.0	0.08 to 9.0	109
FVE0155	FVE-155	155	1.0 to 12.5	0.1 to 12.5	129
FVE0165	FVE-165	165	0.35 to 13.0	0.35 to 13.0	91
FVE0180	HLZ-165	165	0.35 to 13.0	0.35 to 13.0	91
FVE0240	FVE-240	240	1.0 to 18	0.1 to 18	186
FVE0300	FVE-300	300	1.0 to 25	0.15 to 25	236
FVE0375	FVE-375	375	1.0 to 32	0.20 to 32	286
FVE0420	FVE-420	420	1.0 to 35.8	0.25 to 35.8	320
FVE0500	FVE-500	500	1.0 to 46.2	0.30 to 46.2	381

GLOBAL PART NUMBER INFORMATION

Global Part Numbering example: FVE030020E15R0JE (visit www.vishay.net Vishay Dale parts numbering manual for all options)

F	V	E	0	3	0	0	2	0	E	1	5	R	0	J	E		

GLOBAL MODEL (7 digits)	TERMINAL DESIGNATION (2 digits)	TERMINAL FINISH (1 digit)	VALUE (4 digits)	TOLERANCE (1 digit)	PACKAGING CODE (1 digit)	SPECIAL (up to 2 digits)
(see Standard Electrical Specifications Global Model column for options)	**06** **15** **20**	**E** = lead (Pb)-free	**R** = decimal **1R50** = 1.5 Ω	**J** = ± 5 % **K** = ± 10 %	**E** = lead (Pb)-free bulk pack	(dash number) from **1** to **99** as applicable **91** = 100 style BKT **92** = 200 style BKT **93** = 300 style BKT

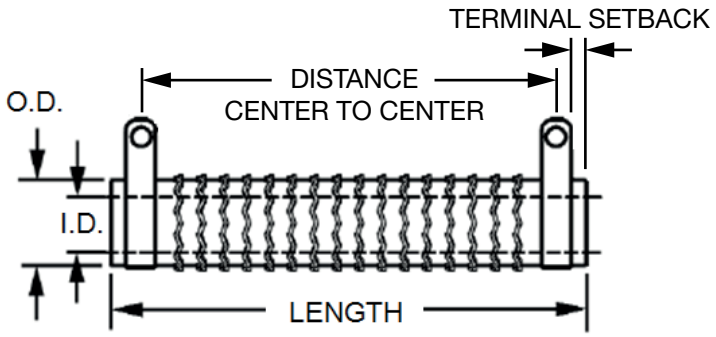
Historical Part Number example: FVE-300-15-5 %

FVE-300	15 Ω	5 %	
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE	SPECIAL

For technical questions, contact: ww2dresistors@vishay.com

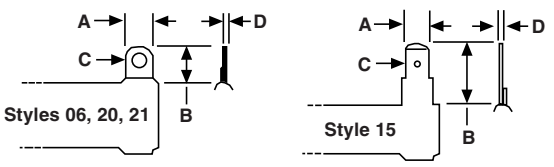
THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

DIMENSIONS in inches (millimeters)



MODEL	CORE DIMENSIONS			TERMINAL SETBACK	DISTANCE CENTER TO CENTER (REF.)	TERMINAL DESIGNATION	
	LENGTH	O.D. ± 0.031 (± 0.79)	I.D. ± 0.031 (± 0.79)			STANDARD	OPTIONAL (QUICK CONNECT)
FVE0050	2.000 (50.8)	0.750 (19.05)	0.500 (12.70)	0.094 (2.18)	1.562 (39.67)	06	15
FVE0090	4.000 (101.6)	0.563 (14.30)	0.313 (7.95)	0.094 (2.39)	3.562 (90.47)	06	15
FVE0100	3.500 (88.90)	0.750 (19.05)	0.500 (12.70)	0.079 (2.01)	3.092 (78.54)	06	15
FVE0110	4.000 (101.6)	0.750 (19.05)	0.500 (12.70)	0.125 (3.18)	3.500 (88.90)	06	15
FVE0120	4.500 (114.3)	0.750 (19.05)	0.547 (13.89)	0.125 (3.18)	3.400 (101.60)	06	15
FVE0140	4.000 (101.6)	1.125 (28.58)	0.750 (19.05)	0.219 (5.56)	2.812 (71.42)	20	15
FVE0155	4.250 (107.95)	1.125 (28.58)	0.750 (19.05)	0.282 (7.16)	3.311 (84.10)	20	15
FVE0165	6.500 (165.1)	0.750 (19.05)	0.750 (19.05)	0.125 (3.18)	5.75 (146.05)	20	15
FVE0180	6.500 (165.1)	0.750 (19.05)	0.750 (19.05)	0.125 (3.18)	5.75 (146.05)	20	15
FVE0240	6.500 (165.1)	1.125 (28.58)	0.750 (19.05)	0.250 (6.35)	5.625 (142.88)	20	15
FVE0300	8.500 (215.9)	1.125 (28.58)	0.750 (19.05)	0.267 (6.78)	7.591 (192.81)	20	15
FVE0375	10.500 (266.7)	1.125 (28.58)	0.750 (19.05)	0.266 (6.76)	9.593 (243.66)	20	15
FVE0420	11.750 (298.45)	1.125 (28.58)	0.750 (19.05)	0.266 (6.76)	10.843 (275.41)	20	15
FVE0500	10.500 (266.7)	1.625 (41.28)	1.125 (28.58)	0.267 (6.78)	9.466 (240.44)	21	-

TERMINAL DIMENSIONS in inches (millimeters)

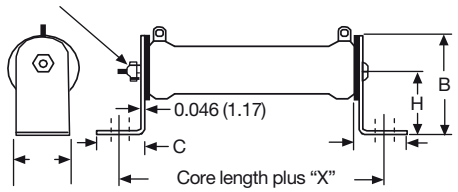


DIMENSIONS	TERMINAL STYLE			
	06	15	20	21
A	0.250 (6.35)	0.250 (6.35)	0.375 (9.53)	0.500 (12.70)
B	0.500 (12.70)	0.594 (15.08)	0.5625 (14.28)	0.625 (15.87)
C (HOLE DIAMETER)	0.173 (4.39)	0.065 (1.65)	0.204 (5.18)	0.264 (6.70)
D	0.020 (0.51)	0.031 (0.79)	0.032 (0.812)	0.025 (0.64)

For technical questions, contact: ww2dresistors@vishay.com
THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

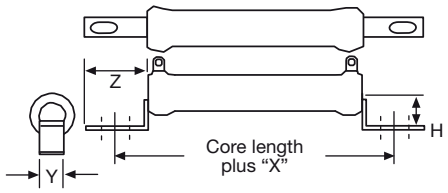
MOUNTING HARDWARE FOR FVE PRODUCTS - Dimensions in inches (millimeters)

91 = 100 Style Horizontal 1 High Bracket



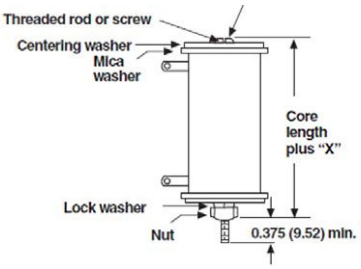
BRACKET TYPE	X	Y	Z	H	MOUNTING SLOT	C	B
102	1.063 (26.99)	0.750 (19.05)	0.859 (21.83)	1.250 (31.75)	0.219 x 0.438 (5.56 x 11.11)	0.750 (19.05)	1.750 (44.75)
103	1.063 (26.99)	1.250 (31.75)	1.000 (25.40)	1.500 (38.10)	0.281 x 0.563 (7.14 x 14.29)	0.927 (23.55)	2.125 (53.98)

92 = 200 Style Push-In Bracket



BRACKET TYPE	X	H	Y	Z	HOLE (DIA.)
204	0.700 (17.78)	0.578 (14.68)	0.250 (6.35)	0.500 (12.70)	0.156 (3.96)
206	0.846 (21.49)	0.800 (20.62)	0.375 (9.53)	0.600 (15.24)	0.343 x 0.213 (8.71 x 5.46)
207	0.700 (17.78)	1.125 (28.58)	0.500 (12.70)	0.687 (17.45)	0.250 x 0.188 (6.35 x 4.78)

93 = 300 Style Thru-Bolt Bracket



BRACKET TYPE	X (APPROXIMATE)	THREAD
302	0.271 (6.88)	10-32
303	0.463 (11.76)	1/4-20

MOUNTING HARDWARE			
GLOBAL MODEL	AVAILABLE BRACKET TYPES BY MODEL		
	91 = 100 STYLE HORIZONTAL 1 HIGH BRACKET	92 = 200 STYLE PUSH-IN BRACKET	93 = 300 STYLE THRU-BOLT BRACKET
FVE0050	102	206	302
FVE0090	102	204	302
FVE0100	102	206	302
FVE0110	102	206	302
FVE0120	102	206	302
FVE0140	103	205	303
FVE0155	103	207	302
FVE0165	102	206	303
FVE0180	102	206	303
FVE0240	103	207	302
FVE0300	103	207	303
FVE0375	103	207	303
FVE0420	103	207	303
FVE0500	103	-	302

For technical questions, contact: ww2dresistors@vishay.com

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

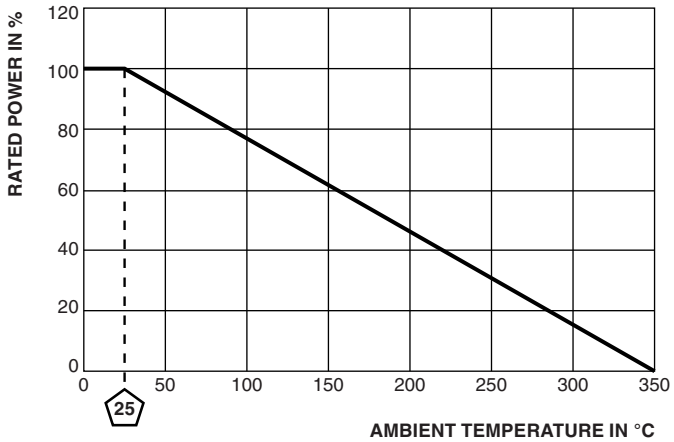
TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	RESISTOR CHARACTERISTICS
Power Rating	W	50 to 500
Resistance Range	Ω	0.10 to 46.2
Resistance Tolerance	%	10
Temperature Coefficient	ppm/°C	± 260 for 20 Ω and above, ± 400 for 1 Ω to 19.99 Ω
Operating Temperature	°C	-55 °C to 350 °C
Temperature Rise	°C	325 °C above an ambient of 25 °C
Maximum Altitude	f.a.s.l.	10 000
Short-Term Overload	-	10x rated power for 5 s
Surge Windings	-	Available
Maximum Working Voltage	-	$(P \times R)^{0.5}$
Insultation Resistance	Ω	1M
Dielectric Voltage	V_{RMS}	1000 V_{AC}
Creepage	-	Varies by wattage, see “Terminal Setback” in Dimensions table
Terminal Sleeves	-	n/a
Inductance	µH	Varies by wattage and resistance
Non-Inductive Winding	-	n/a
Terminal Strength	lb	10 lbs
Electrical or Mechanical Customization	-	Contact factory: ww2dresistors@vishay.com

MATERIAL SPECIFICATIONS

Element	Copper-nickel alloy or nickel-chrome alloy, depending on resistance value
Core	Cordierite, steatite
Coating	Special high temperature vitreous enamel
Standard Terminals	Tinned alloy 42
Optional Terminals	Alloy 42
Terminal Bands	Alloy 42
Part Marking	HEI, model, wattage, value, tolerance, date code

DERATING



For technical questions, contact: ww2dresistors@vishay.com

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, “Vishay”), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay’s knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer’s responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer’s technical experts. Product specifications do not expand or otherwise modify Vishay’s terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.