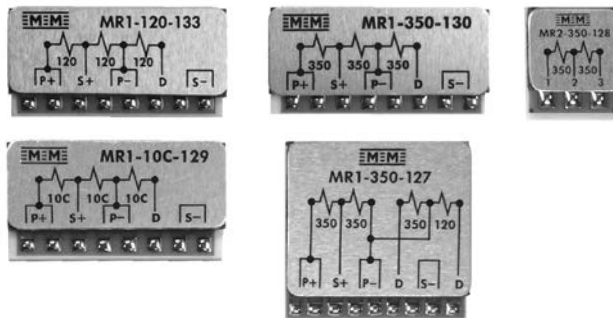


Information and Selection Chart

Strain gage instrumentation is readily available with built-in bridge completion resistors and “dummy” gages to accept quarter- and half-bridge strain gage input circuits. However, if the instrumentation at hand is not provided with these components, or if the measurement application does not permit their use, external bridge completion must be provided, and MR-Series Bridge Completion Modules can be an excellent choice in these applications.

MR-Series Bridge Completion Modules employ metal-foil resistance elements, bonded to a dense ceramic substrate. The resistance elements are specially processed to “match” the thermal expansion coefficient of the ceramic, resulting in a very low resistance temperature coefficient equivalent to $\pm 0.15 \mu\epsilon/^\circ\text{F}$ ($\pm 0.27 \mu\epsilon/^\circ\text{C}$) for the half-bridge circuits, and $\pm 0.35 \mu\epsilon/^\circ\text{F}$ ($\pm 0.63 \mu\epsilon/^\circ\text{C}$) for the dummy gages, over a temperature range from 0° to $+200^\circ\text{F}$ (-18° to $+95^\circ\text{C}$). Maximum operating temperature range is -50° to $+250^\circ\text{F}$ (-45° to $+120^\circ\text{C}$).

Each module is covered with a special environmental protection system to ensure long-term stability. A rugged aluminum overlay, embossed with a wiring diagram for easy terminal identification, affords additional protection, and in many applications no supplementary environmental protection is required. Each module is provided with foam tape for easy attachment to the test-part surface or at the instrumentation site, and tinned, heavy copper terminals facilitate attachment of up to 22-gauge (0.64 mm dia.) leadwires.



Completing the bridge circuit at the strain gage site provides for a symmetrical, balanced leadwire system between the strain gage circuit and the instrumentation. This can reduce effects of noise pickup in the leadwire system in some environments. Where switch contacts, slip rings, or other mechanical connections are employed between the strain gages and measuring instrumentation, or when leadwires will be periodically disconnected from the measuring instrument, accuracy can be improved by completing the bridge at the measurement site. Bridge completion modules can be designed to meet special circuit requirements. Contact our Applications Engineering Department for a detailed discussion of your special needs.

CHARACTERISTICS		
MODULE TYPE AND FEATURES	BRIDGE EXCITATION (VOLTS)	
	RECOMMENDED	MAXIMUM
MR1-350-127: Provides a precision 350 Ω half bridge as well as 120 Ω and 350 Ω dummy gages. Recommended for use with half-bridge strain gage circuits of any resistance value, or with 120 Ω or 350 Ω three-wire quarter-bridge circuits. Size (including foam tape): 1 x 1 x 0.2 in (25 x 25 x 5 mm). Weight: 6 g.	0.5–15 V 0.5–25 V	20 V (D120) 35 V (D350)
MR1-10C-129: Provides a precision 1000 Ω half bridge and a 1000 Ω dummy gage. Recommended for use with half-bridge strain gage circuits of any resistance value, or with 1000 Ω quarter-bridge circuits. High resistance extends battery life in battery-powered instrumentation, reduces strain gage self-heating, and permits higher bridge excitation voltage to improve signal-to-noise ratio. Size (including foam tape): 1.2 x 0.6 x 0.2 in (30 x 15 x 5 mm). Weight: 4 g.	0.5–30 V	40 V
MR1-350-130: Provides a precision 350 Ω half bridge and a 350 Ω dummy gage. Recommended for use with half-bridge strain gage circuits of any resistance value, or with 350 Ω three-wire quarter-bridge circuits. Size (including foam tape): 1.2 x 0.6 x 0.2 in (30 x 15 x 5 mm). Weight: 4 g.	0.5–18 V	25 V
MR2-350-128: Provides a precision 350 Ω half bridge in a compact size for use with half-bridge strain gage circuits. Small size makes it ideal for attachment at the strain gage site on the test part in many applications. Size (including foam tape): 0.5 x 0.7 x 0.2 in (13 x 18 x 5 mm). Weight: 2 g.	0.4–18 V	25 V
MR1-120-133: Provides a precision 120 Ω half bridge and a 120 Ω dummy gage. Recommended for use with half-bridge strain gage circuits of any resistance value, or with 120 Ω three-wire quarter-bridge circuits. Size (including foam tape): 1.2 x 0.6 x 0.2 in (30 x 15 x 5 mm). Weight: 4 g.	0.5–15 V	20 V

Half-bridge circuits in each module type are balanced to within $\pm 0.005\%$. Resistance tolerance on each dummy gage is $\pm 0.02\%$.



Disclaimer

ALL PRODUCTS, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Vishay Precision Group, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "VPG"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

The product specifications do not expand or otherwise modify VPG's terms and conditions of purchase, including but not limited to, the warranty expressed therein.

VPG makes no warranty, representation or guarantee other than as set forth in the terms and conditions of purchase. **To the maximum extent permitted by applicable law, VPG 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.**

Information provided in datasheets and/or specifications may vary from actual results in different applications and performance may vary over time. Statements regarding the suitability of products for certain types of applications are based on VPG's knowledge of typical requirements that are often placed on VPG products. 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. You should ensure you have the current version of the relevant information by contacting VPG prior to performing installation or use of the product, such as on our website at vpgsensors.com.

No license, express, implied, or otherwise, to any intellectual property rights is granted by this document, or by any conduct of VPG.

The products shown herein are not designed for use in life-saving or life-sustaining applications unless otherwise expressly indicated. Customers using or selling VPG products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify VPG for any damages arising or resulting from such use or sale. Please contact authorized VPG personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.

Copyright Vishay Precision Group, Inc., 2014. All rights reserved.