

ARD154

Wheatstone bridge amplifier

SPECIFICATIONS

- DIN Rail Amplifier
- 350 Ω to 10000 Ω full Wheatstone bridges
- ± 10 V Analogue or 0/4-20 mA Current Output
- 24 Vdc Isolated Power Supply
- 2 kHz or 20 kHz max. Bandwidth

TE Connectivity (TE) offers comprehensive measurement solutions including electronic signal conditioning and display units.

The **ARD154** is a DIN rail mountable amplifier, which adapts to most strain gage-based load cells, pressure transducers and accelerometers. The bridge supply voltage can be set to 5V or 10V ± 10 V analogue output signals or 0/4-20mA current outputs. It covers sensitivity range from 0.1mV/V to 30mV/V. It also allows connecting four 350 Ω sensors in parallel with 5Vdc excitation.

Through its modular design, the **ARD154** adapts to many different applications. Basic settings with onboard jumpers includes:

Bridge supply voltage

Bandwidth

Signal output for voltage or current

Zero and Gain adjusting is facilitated by trimmers on the front panel.

Other Rail DIN electronics are available such as **LDM 1000** for LVDT linear or RVDT rotary sensors.

FEATURES

- Suited for 1 to 4 Strain Gage Sensors in parallel
- 120 to 10000 Ω Bridge Impedance
- 10 V or 5 V Bridge Excitation – 4 or 6 wires
- Adjustable Sensitivity Range 0.1 to 30 mV/V
- Calibration Pushbutton from 0.1 to 10 mV/V
- Zero and Gain Fine Tuning by Trimmers
- 0.01% F.S. Accuracy.
- 12 Vdc ± 10 % Isolated Power Supply on request

APPLICATIONS

- Monitoring devices
- Weighing
- Robotic and effectors
- Laboratory and Research

CARACTERISTIQUES (valeurs typiques à température 23°C)

General Characteristics

Dimensions (H x L x D)	99 x 17.5 x 112 mm [4 x .69 x 4.4 in]
DIN rail mountable module	European format 35mm large
Operating Temperature	-10 ° C to 60° C [14 to 140° F]
Storage Temperature	-40 ° C to 70 ° C [-40 to 158° F]
Screw Connector Blocs	4 x 3 terminals
Weight	110 grams [.25lb]

Electrical Characteristics

Power Supply	24 Vdc (18-36 Vdc) or optional 12 Vdc (9-18 Vdc)
	Consumption 100 mA max.
Power Supply Isolation	1000 Vdc max. 1 min between 0 V and GND output
	400 V peak 0V input/ ground or GND output/ground

Sensory Input

Sensor type	Full bridge, strain gauge-based, 4 or 6 wires. Bridge 350 to 10000Ω (120Ω on request) Max current 60 mA
Bridge Impedance	120 Ω < Z < 10000 Ω (for 120 Ω, bridge excitation 5 V max.)
Bridge Supply Voltage	10 Vdc or 5 Vdc (for 120 Ω select 5 V) I maxi 60 mA
Sensor Cable Rejection	2.10-5 / Ω
Input Sensitivity	5 ranges from 0.1 mV/V to 30 mV/V
Fixed Zero Offset	4 ranges from ±50% to ±100% F.S.
Adjustable Zero Offset	± 50% F.S.
Calibration Levels	0.1 to 10 mV/V
Calibration Level Accuracy	0.01% F.S. for range 1 to 3 mV/V, 0.1% other ranges

Analogue Output

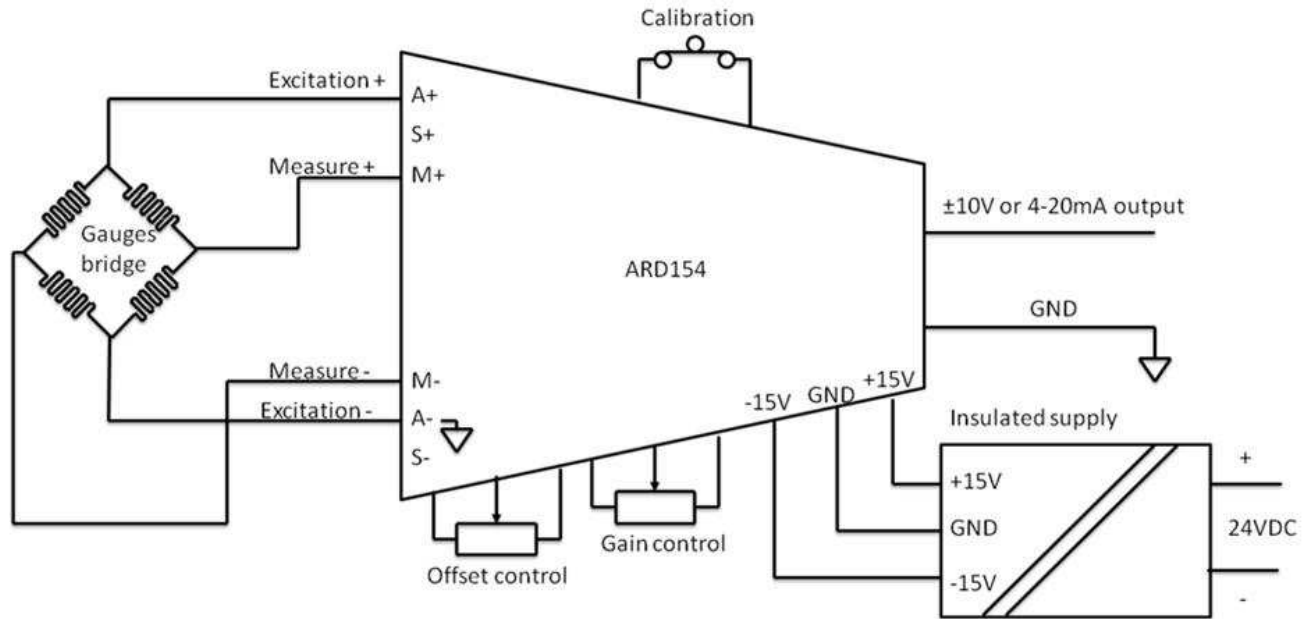
Voltage Output	±10 V max.
Output Current	5 mA max.
Output Impedance	0.2 Ω max.
Current Output	4-20 mA or 0-20 mA
Dynamic of the Current Output	0-10 V (Load Resistance 500 Ω at 20 mA)
Linearity	0.01% F.S.
Maximum Drift at the Input	< 1 μV / ° C
Maximum Noise at the Input	< 3 μV RMS/2 kHz, 10μV RMS/20 kHz (typical)
Common Mode Rejection	100 dB
Rejection of Power Supply Variations	120 dB
Bandwidth	2 kHz or 20 kHz at -3 dB (15 kHz max. for range 0.1mV/V)

Example: four 350Ω bridges in parallel have a total of 4x14,3mA=57,2mA consumption under 5Vdc which is the limit (10Vdc power supply cannot be used)

ARD154

Amplificateur Rail DIN de pont de Wheatstone

WIRING SCHEMATIC



ORDERING INFORMATION

Description	Part Number
ARD 154 18-36VCC	NEMEME001
ARD 154 12VCC	EARD-X-C00002



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