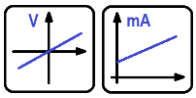


ARD154

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.

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

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 ±10V 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.

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

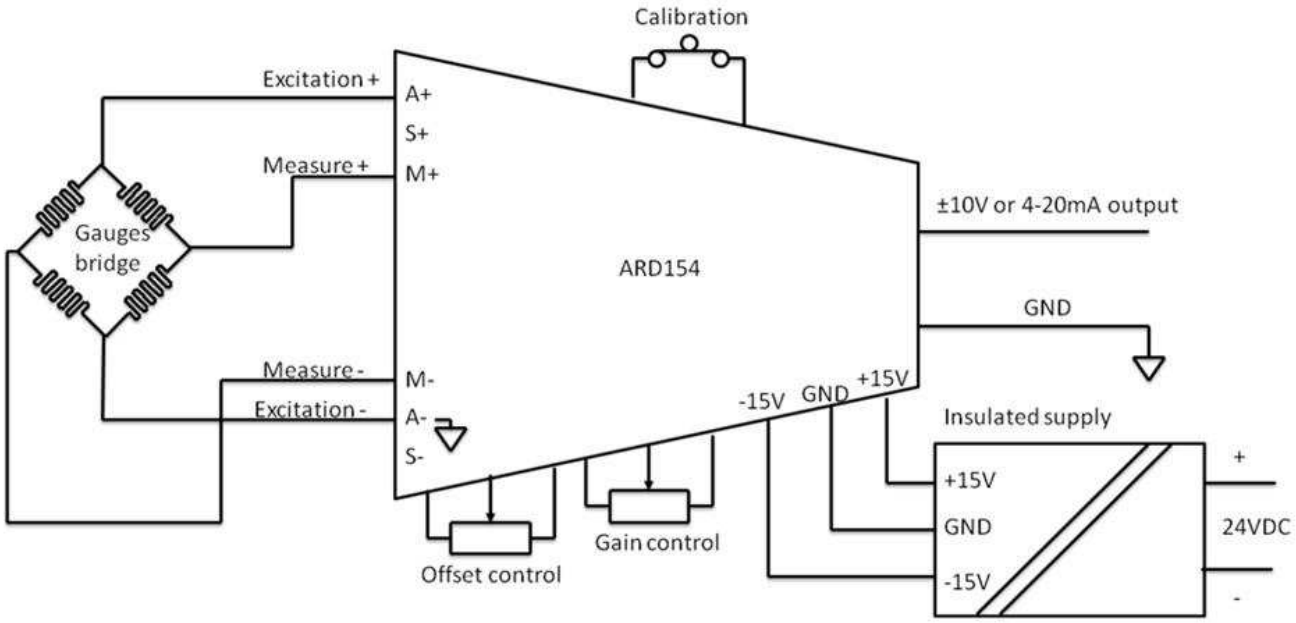
Sensor type	Full bridge, strain gauge-based, 4 or 6 wires. Bridge 350 to 10000Ω (120Ω on request) Max current 60 mA
Bridge Impedance	120 Ω < Z < 10000 Ω (for 120 Ω, bridge excitation 5 V max.)
Bridge Supply Voltage	10 Vdc or 5 Vdc (for 120 Ω select 5 V) I maxi 60 mA
Sensor Cable Rejection	2.10-5 / Ω
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)

WIRING SCHEMATIC



ORDERING INFORMATION

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