

DTP 201 Digital Strain Gauge Amplifier

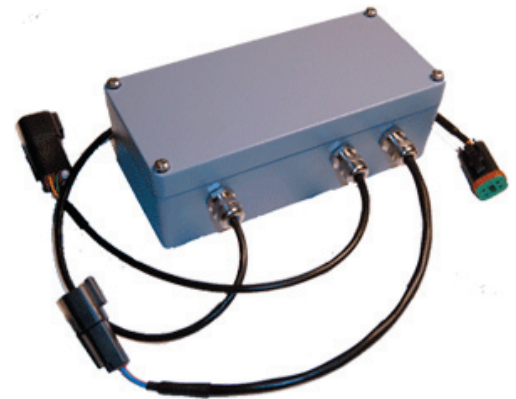
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DTP 201 Digital Strain Gauge Amplifier

DESCRIPTION

The DTP201 is a Digital Strain Gauge Amplifier, designed to take input from a Strain Gauge and provide serial digital data, relating to input, to other electronic equipment. It also has the facility for connection of a DTP241 - 4 Digit Display Module to provide a visual reading of the data from the Strain Gauge. This amplifier can also be used in applications such as load cell indicators and other types of transducers. The amplifier is simple to install and set up using simple commands, it is incredibly versatile and user friendly. ASCII Commands such as (\$READ, \$RUN) are simple to use and each amplifier comes with a set of easy to follow guidance notes.



OPERATION

The signal from the strain gauge is amplified and then digitised at approximately 15 times per second. Calculations are then performed on the digitised data to remove zero offset and present the data in calibrated engineering units according to the values stored when the unit was set up. A variable signal damping feature is provided to enable dynamic signals to be smoothed for easier reading. All set-up, general usage and calibration functions can be simply accessed, via the Serial Data Link. Setting of the strain gauge Zero point is simply achieved, when the sensor is at zero, by a Command via the Serial Data Link. Calibration to a specific Strain Gauge is also simply achieved, by applying a known load to the Strain Gauge, at, or close to, it's full scale value and defining the engineering unit value for that load, by using a command via the Serial Data Link.

STRAIN GAUGE INPUT

The Strain Gauge Input provides a 4 wire connection for a Full Bridge configuration. Other configurations are possible with user supplied, external, bridge completion.

Bridge Supply Voltage	10V Nominal
Bridge Signal Input Range	± 0.5 to ± 3.0 mV/V
Digitisation Reference Voltage	Derived ratiometrically from bridge supply to accommodate variations in bridge supply without loss of accuracy.
Resolution	+/- 18 bit

PHYSICAL

Enclosure (DTP201)	Diecast Aluminium Box (175mm x 80mm x 60mm)
Enclosure (DTP241)	Plastic Enclosure (80mm x 80mm x 45mm)
Environmental	IP66
Temperature Range	Operating 0 C to +50 C Storage -20 C to +80 C
Connection	Power, Strain Gauge Input and Serial Data Link, via Flying Leads.

POWER SUPPLY

Voltage	12V or 24V DC Nominal
Voltage Tolerance	10.8 to 28V
Ripple & Noise	< 50mV
Supply Current	< 100mA (Including Bridge Supply for 350R Full Bridge Sensor)

DTP 201 AMPLIFIER

SERIAL DATA LINK

The Serial Data Link is RS485/422 compatible, Full Duplex — 4 wire operation. It is also configured to be compatible with most standard RS232 connections.

Baud Rate	9600
Start Bits	1
Data Bits	8
Stop Bits	1
Data format	Standard ASCII coded command and response

CONNECTION

Connection is via a 5 core flying lead, the connection of which depends on the operating mode required.

RS485 / 422 Full Duplex

Yellow	DTP201 Transmit 'A'
Green	DTP201 Transmit 'B'
Blue	DTP201 Receive 'A'
Red	DTP201 Receive 'B'

RS232 PC Com Port Connection

	9 Pin	25 Pin
Red DTP201 Receive	Pin3	Pin2
Blue / Yellow Common	Pin5	Pin7
Green DTP201 Transmit	Pin2	Pin3