

TXA15101E

Single Channel, 151MHz Analog Transmitter

Features

- 1 analog channel which is 4-20mA with 10 bit accuracy
- 1 digital channel which is a normally open contact
- Up to 5 km range with line of sight operation
- 12 way dip switch to set transmitter and receiver ID



Applications

- Monitoring storage tank levels
- Remote temperature and humidity monitoring
- Monitoring flow rates, industrial equipment and machinery

Description

The TXA15101E is an analog and digital 151 MHz transmitter. The analog signal, normally 4-20mA is transmitted and then recreated at the receivers (RXA15101E) analog output. Also, the normally open digital contact can be simultaneously transmitted with the analog signal. This eliminates the high cost of wiring and has the flexibility of wireless data collection.

Using 151MHz has superior penetration in congested industrial environments with steel construction. Higher frequencies such as 433MHz or 915MHz tend to reflect off metal and make wireless data collection difficult. The on board 12-way dip switch sets the ID for the transmitter. This has to be matched to the 12 way dip switch on the receiver for a communication between the transmitter and receiver.

External supply connection and **SO239 antenna** socket is provided with the transmitter.

Modes

The one way mode switch on the board selects the sampling transmission rate.

Mode Sw. 1 OFF : Sample Rate 2 to 62 seconds.

Transmitter will transmit a 1.5 second transmission burst and then stop for the time selected. The time is user selectable between 2 to 62 seconds by adjusting the trimpot of the transmitter board. If the digital input is activated during the "off delay" period the new data will be transmitted immediately. The transmitter will transmit indefinitely if the supply is connected.

Mode Sw. 1 ON : Off Delay 1 to 10 minutes.

Same as mode 1 except the sample rate is user selectable between 1 to 10 minutes.

Longer sample rates are possible. **Contact Elsema.**

Operating Frequency

There are 8 selectable frequencies available. This is achieved by setting the 3-way dipswitch. The default setting is for 151.6MHz (All 3 dipswitches "ON"). Following is a table with the Dipswitch settings and the corresponding frequencies.

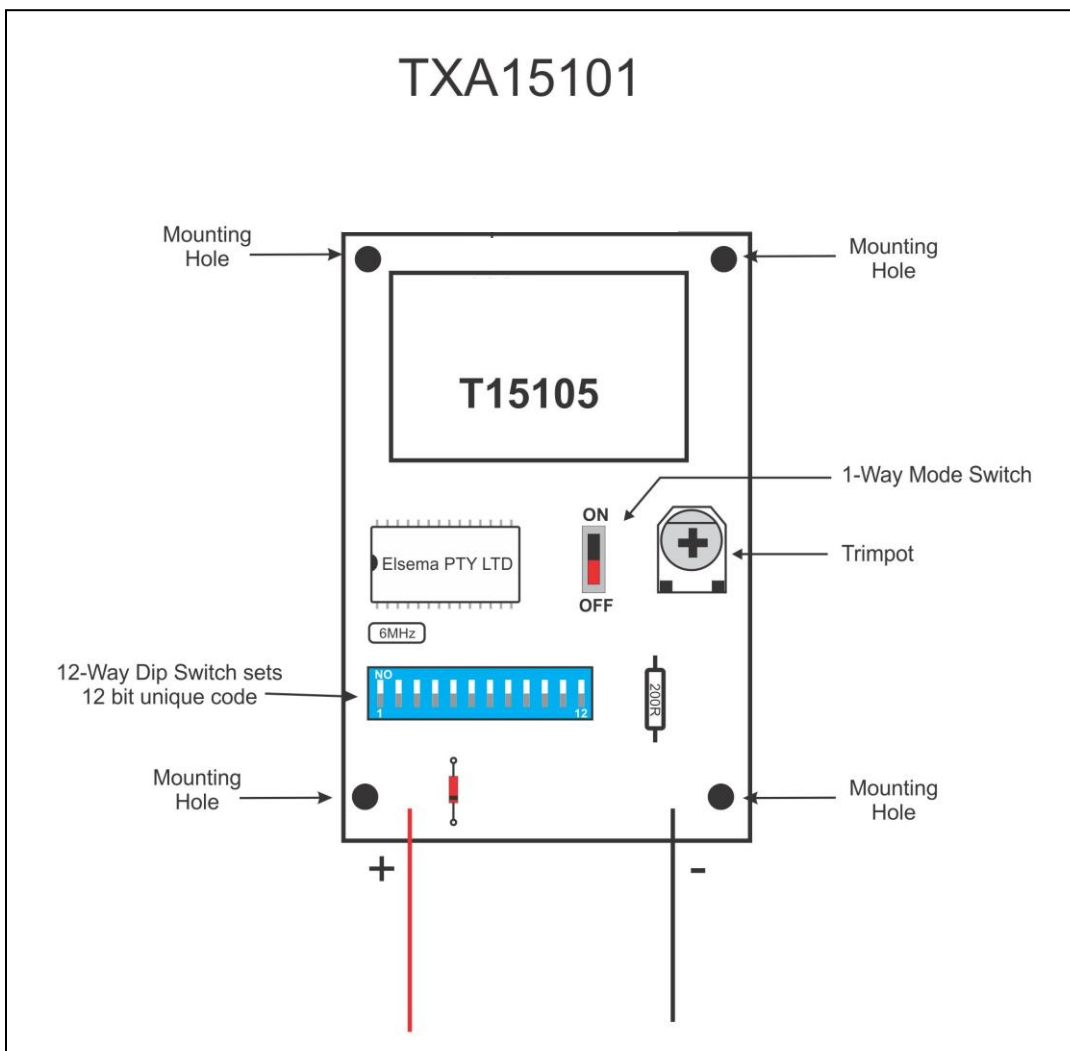


Frequency	1	2	3
151.600 MHz	On	On	On
152.375 MHz	Off	On	On
151.775 MHz	On	Off	On
151.400 MHz	Off	Off	On
151.175MHz	On	On	Off
151.025 MHz	Off	On	Off
150.900 MHz	On	Off	Off
150.825 MHz	Off	Off	Off

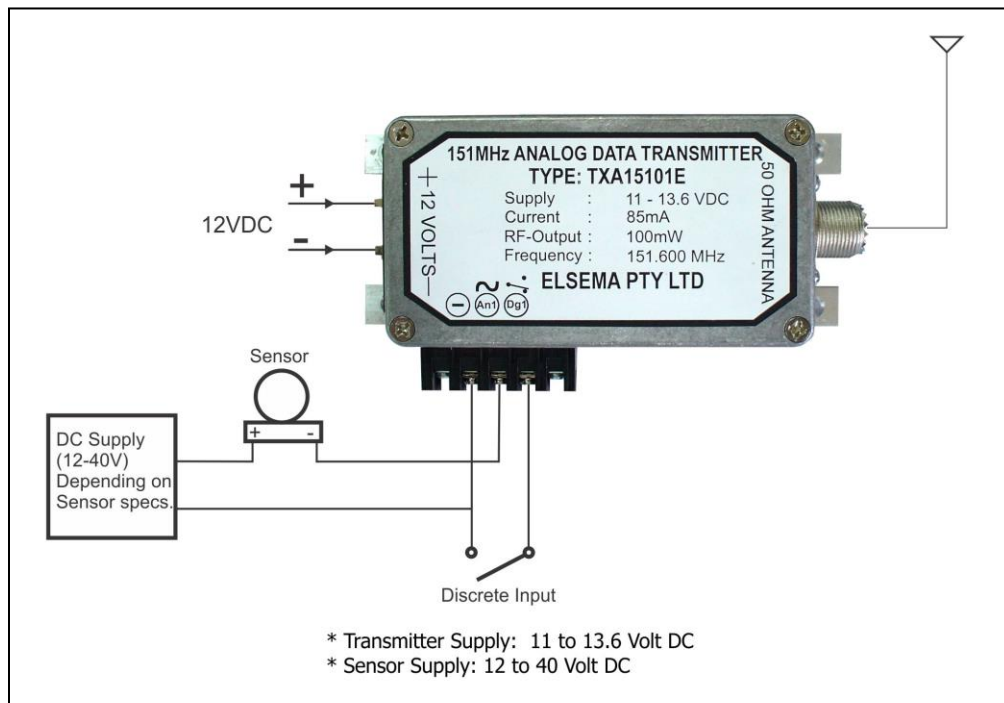
Technical Data

Supply Voltage	11 to 13.6VDC (for constant RF output), screw type terminal. Absolute maximum 14VDC.
Current Consumption	Nominal 80mA at 12VDC (Transmitting), 12mA on standby
Operating Frequencies	151.6MHz (8 selectable frequencies. See table above)
Inputs	4-20mA analog and Normally open contact
Oscillation System	VCO with 10ppm crystal controlled reference oscillator
Operating Temperature Range	-5 to 50°C
Frequency Deviation	+/- 5 kHz
Type of Emission	Narrow Bandwidth Frequency Modulation
R.F. Output Power	100mW into 50Ω SO239 socket
Antenna	SO239 socket provided. Optimum performance with Elsema ANT151M antenna
Internal Resistance on Analog Input	200Ω
Maximum Current on Analog Input	25mA
Coding System	On board 12 way code switch
Dimension	140 X 60 X 34mm
Mounting Hole Size	4.76 mm or 3/16"
Weight	225 grams
Useable Operating Range	Up to 5000m, depending on installation and type of antenna used. Recommended Antenna is Elsema ANT151M
Compatible Receiver	RXA15101E

Block Diagram



The connection for the analog input is as follows:



Sensor:

The sensor can be any device that will output 4-20mA's when connected to the TXA15101E analog input. The TXA15101E has an internal 200 Ω resistor that has to be accounted for when deciding on what supply is to be used for the sensor.

The sensor is usually a device used to monitor tank levels, temperature, humidity, flow rates etc.

Discrete Input:

Discrete input to the transmitter should be voltage free contact closure only.

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