

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 of 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

No case version is also available - **TXA15101**

The **TXA15101** transmitter is the **PCB assembly only**, while the TAX15101E transmitter is enclosed in an **alloy metal case**.

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 indefinitely transmit if the supply is connected.

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

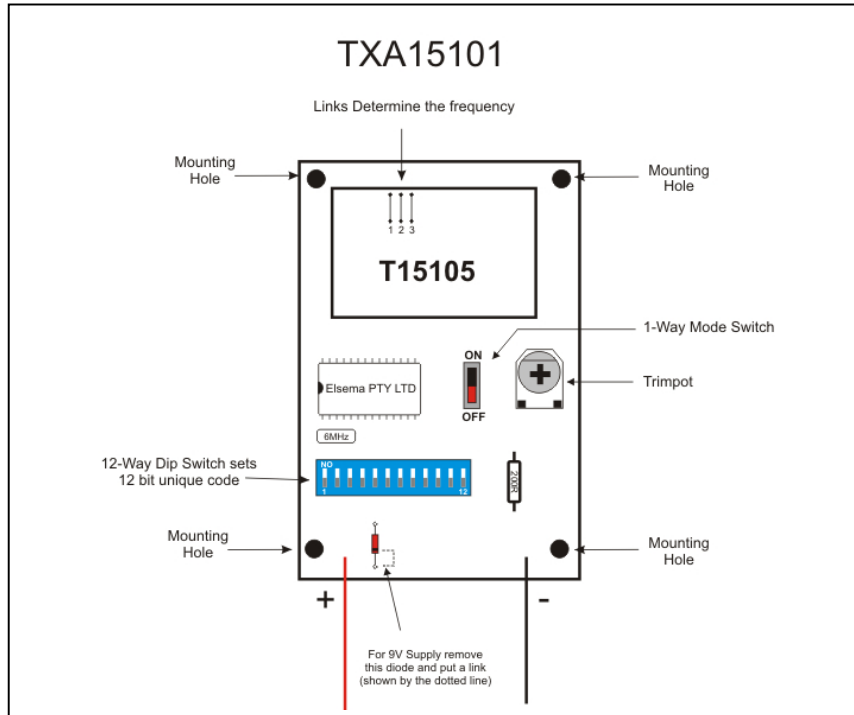
Same as mode 1 except the sample rate is user selectable between 1 to 10 minutes.

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

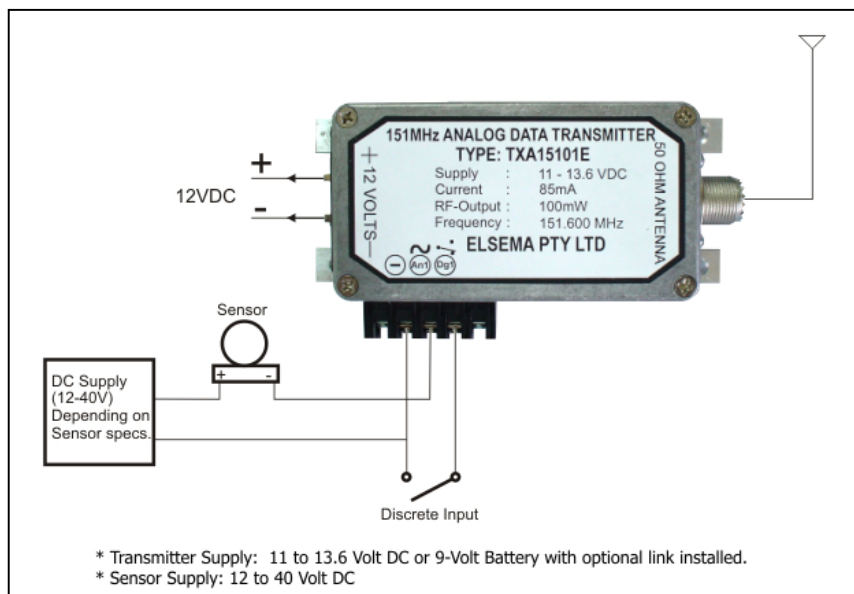
Technical Data

Supply Voltage	11 to 13.6VDC (for constant RF output), screw type terminal. Absolute maximum 14VDC.	
Battery Operation	9 Volts Battery, with additional wire link added by user. See picture below. Warning: DO NOT APPLY 12 Volts to the supply terminal when the battery link is added. This will damage the transmitter.	
Current Consumption	Nominal 80mA at 12VDC (Transmitting), 12mA on standby	
Operating Frequencies	151.6 MHz (Link 1, Link 2, Link 3)	
	151.5MHz (No Link 1, Link 2, Link 3)	
	151.4MHz (Link 1, No Link 2, Link 3)	
	151.3MHz (No Link 1, No Link 2, Link 3)	
	151.2MHz (Link 1, Link 2, No Link 3)	
	151.1MHz (No Link 1, Link 2, No Link 3)	
	151.0MHz (Link 1, No Link 2, No Link 3)	
	150.9MHz (No Link 1, No Link 2, No Link 3)	
	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"	
Mounting Hole Space	Length 125mm (4.92") Width 45 mm (1.77")	
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 TXA15101 analog input. The TXA15101 has an internal 200Ω 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.

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