

RXA15101E

Single Channel, 151MHz Analog Receiver

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 RXA15101E is an analog and digital 151 MHz receiver. The analog signal, normally 4-20mA is received from the transmitters (TXA15101E) analog input. Also, the normally open digital contact can be simultaneously received 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 receiver. This has to be matched to the 12-way dip switch on the transmitter for a secure transmission.

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

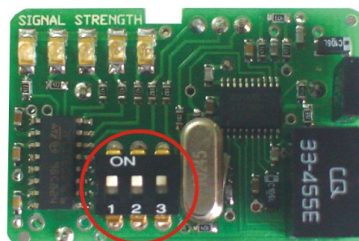
Signal Strength Indicator

The 151MHz receivers have five blue LED's on the board. The table below indicates the level of the valid transmitted signal.

5 LED's on	-70dBm	Very Strong signal	Very Reliable operating conditions
4 LED's on	-75dBm	Very Strong signal	Very Reliable operating conditions
3 LED's on	-80dBm	Very Strong signal	Very Reliable operating conditions
2 LED's on	-90dBm	Strong signal	Very Reliable operating conditions
1 LED on	-100dBm	Good signal	Reliable operating conditions

Noise Strength Indicator

If more than 1 led is "ON" without a valid transmission, this indicates that there is noise on the frequency selected. Change the **3-way dipswitch** on the **receiver module** to select a different frequency. Following is a table with the Dipswitch settings and the corresponding frequencies.



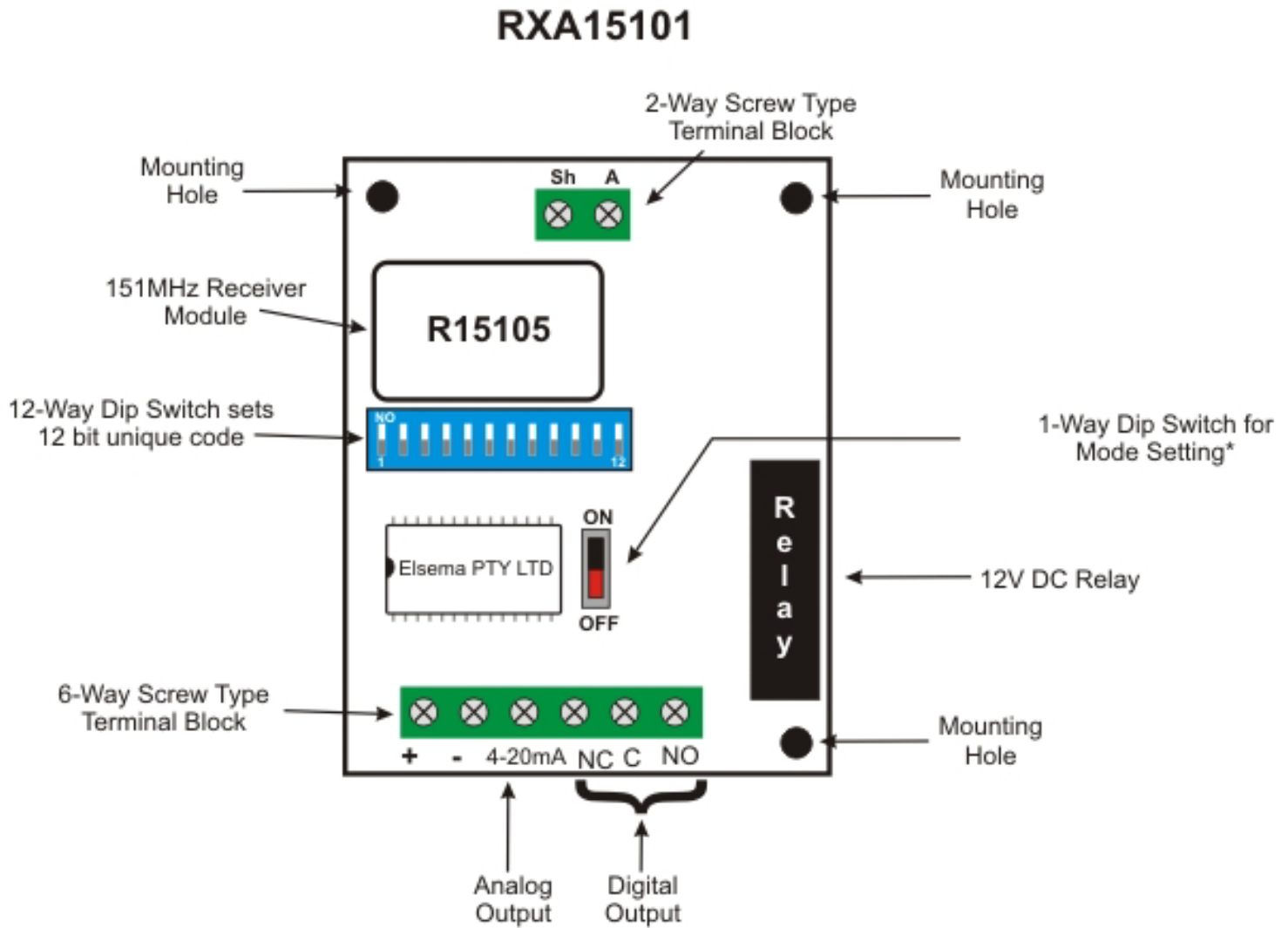
3-way Dipswitch

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

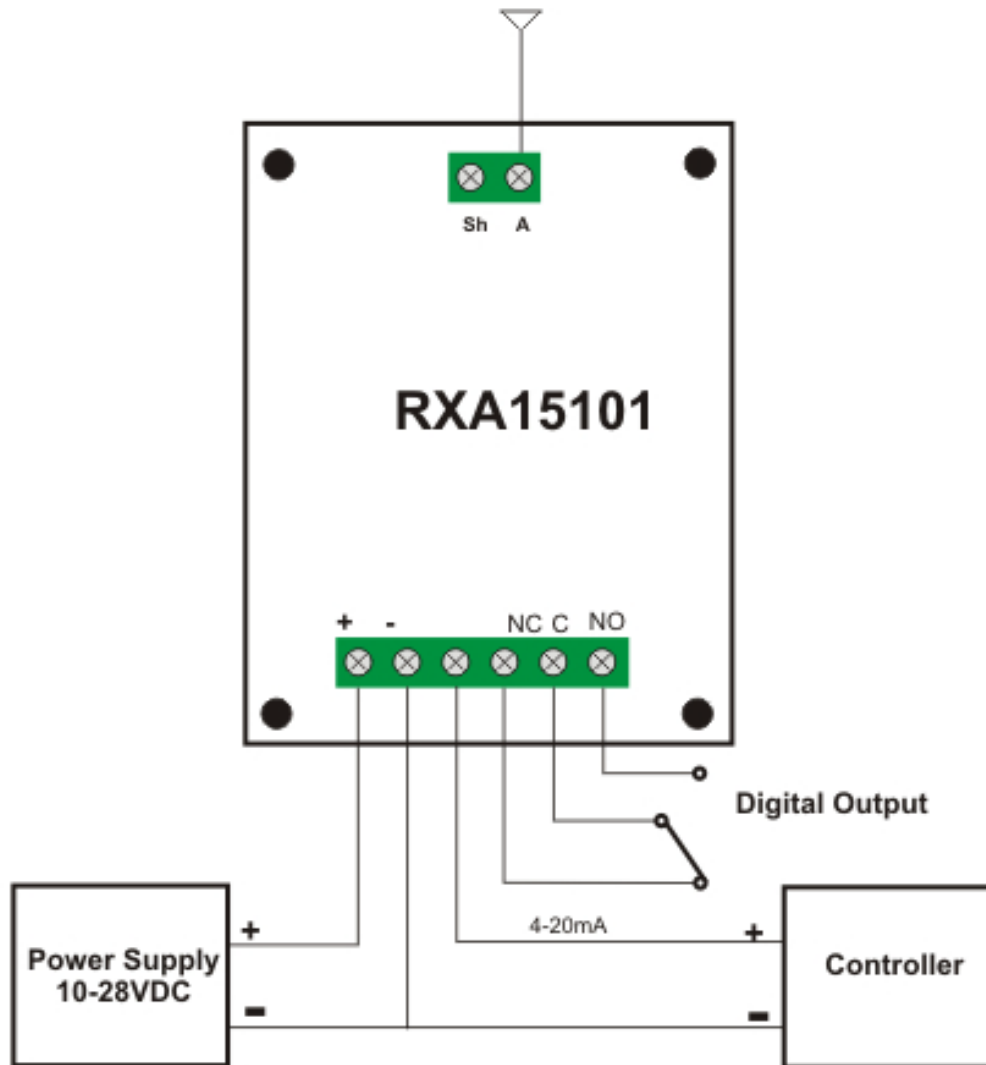
Technical Data

Supply Voltage	12.0 – 24.0VDC
Current Consumption	23mA - standby 85mA – Analog Output 20mA and Relay ON
Operating Frequencies	151.6MHz (8 selectable frequencies. See table above)
Output	4-20mA analog and Normally open contact
Operating Temperature Range	-5 to 50°C
IF Frequency	10.7MHz
Sensitivity	Better than 0.5uV (For signal reception).
Type of Demodulation	Narrow Bandwidth Frequency Modulation
Maximum Load on Current Loop	350Ω with 12V supply 600Ω with 24V supply
Antenna	50Ω 151 MHz Antenna
Dimensions	160 X 80 X 35mm
Mounting Hole Size	3.97mm or 5/32"
Useable Transmitters	TXA15101E
Weight	83g

Block Diagram



*If no signal is received for 2min 20sec (or 23.3 minutes if Mode Switch 1 is ON) then analog output goes to maximum (20mA) and relay switches OFF.



* The receivers supply negative must be connected to the controllers negative.

Controller:

The controller can be any device that will receive 4-20mA when connected to the RX15101 analog output. The controller is usually a visual device such as meter which will indicate the tank levels, temperature, humidity, flow rates etc at the transmitters location.

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