

T24-VA & T24-IA Wireless Telemetry TYPE: T24-VA Voltage & Current Input Acquisition Module T24-IA

Features

- 2 way radio system for data integrity
- Very low power consumption for long battery life
- Very small size
- Worldwide licence exempt 2.4 GHz radio
- Option of hand held remote display or PC interface for data capture
- Remote power on/off (sleep/wake)
- 120 metre (400 feet) range maximum
- Simple configuration and calibrated via PC using base station with Telemetry Toolkit software

Typical Applications

- Wireless conversion of process sensors

Description

The T24-VA & IA are high performance voltage (0-10V) and current (0-21 mA - calibrated to a 4-20mA range) to radio telemetry converter modules, offering precision measurement with high performance two-way telemetry. Usable around the globe on licence-free 2.4GHz frequency, the T24 range avoids local radio interference to ensure data integrity and security. For use in any measuring applications, from torque to weight, vibration to flow, the T24 offers users a complete solution to your measurement requirements.

The modules form part of a simple measurement system that offers the opportunity to collect measurements from a variety of sources, enabling accurate and immediate data collection without the requirement for extensive and labour intensive cabling operations.

Transmitting from an analogue module on 2.4 GHz to a variety of receivers including a user friendly simple 2 button handheld T24-HS which captures this data and displays it providing a line of sight communication range of typically 120 metres. The T24-HS also performs the function of waking the T24-VA when it is turned on and sending it to deep sleep module when it is turned off.

The wide temperature operating range and the robust technology ensures that the module is not susceptible to harsh physical or electrical environments. Options include internal or external antenna and a growing range of interface modules.

The licence-free 2.4GHz radio provides a line-of-sight communication range of 120 metres (400 feet), extendable by the use of a repeater. The use of the latest DSSS radio technology minimises local radio interference and ensures data integrity and security.

The wide operating temperature range and the robust technology ensures that the module is not susceptible to harsh physical or electrical environments.

LCM Systems can supply the T24 products integrated into a complete system, to meet a variety of different application requirements. Please contact LCM's technical department to discuss your wireless telemetry requirements.



Specification

General Radio

Parameter	Min	Typical	Max	Units
Licence	Licence Exempt			
Modulation method	MS (QPSK)			
Radio type	Transceiver (2 way)			
Data rate	250			K bits/sec)
Radio Frequency	2.4000		2.4835	GHz
Power	1			mw
Range RAD24i (Integrated antenna)			120 (400)	Metres (feet) *
Range RAD24e (External antenna)			200 (650)	Metres (feet) *
Channels (DSSS)	16			

* Maximum range achieved in open field site with T24-SA at a height of 3 metres above ground and T24-HS held at chest height pointing towards the T24-SA.

Approvals

CE, Complies with EMC directive. 2004/108/EC. The Radio Equipment and Telecommunications Terminal Equipment (R&TTE) Directive, 1999/5/EC.

FC

Family: RAD24

 Industry Canada Industrie Canada IC:7224A-RAD24

T24-VA – Voltage Input Measurement

Parameter	Min	Typical	Max	Units
Input Range Sensitivity (FR)	0		+10	V dc
Gain Temperature Stability			50	ppm/°C
Non Linearity before Linearization		5	25	ppm of FR
Internal Resolution		16,000,000/ 24		Resolution/Bits
Input Impedance		100,000		ohms
Input Calibration Accuracy			<±0.1	%FR
Noise Free where Sample Time < 10mS		5,000 / 12.25		Resolution/Bits
Noise Free where Sample Time < 100mS		8,000 / 13.0		Resolution/Bits
Noise Free where Sample Time < 1000mS		11,000 / 13.5		Resolution/Bits
Noise Free where Sample Time > 1000mS		15,000 / 13.75		Resolution/Bits

T24-IA – Current Input Measurement

Parameter	Min	Typical	Max	Units
Input Range Sensitivity (FR)	0		21	mA dc
Calibrated Range	4		20	mA dc
Gain Temperature Stability			50	ppm/°C
Non Linearity before Linearization		5	25	ppm of FR
Internal Resolution		16,000,000/ 24		Resolution/Bits
Input Impedance		47		ohms
Input Calibration Accuracy			<±0.1	%FR
Noise Free where Sample Time < 10mS		5,000 / 12.25		Resolution/Bits
Noise Free where Sample Time < 100mS		8,000 / 13.0		Resolution/Bits
Noise Free where Sample Time < 1000mS		11,000 / 13.5		Resolution/Bits
Noise Free where Sample Time > 1000mS		15,000 / 13.75		Resolution/Bits

Electrical

Parameter	Min	Typical	Max	Units
Power Supply voltage	2.1	3.0	3.6	V dc
Power Supply ripple			50	mV ac pk-pk

Power Supply Current

Parameter	Min	Typical	Max	Units
Normal Mode (on constantly)		40	45	mA
Sleep Mode		5	20	µA

Battery Life (in low power mode, 3HZ update rate)

Parameter	Usage	Battery Life
Pair AA cells	Constantly on	1 month
Pair AA cells	12 sessions per day of 5 minutes	2 years
Pair D cells	Constantly on	2.5 months
Pair D cells	12 sessions per day of 5 minutes	5 years

Environmental

Parameter	Min	Typical	Max	Units
Operating temperature range	-40		+85	°C
Storage temperature	-40		+85	°C
Humidity	0		95	%RH

Module Transmits & Receives using:

- Full error detection and correction
- The ability to be switched from sleep to operating mode via radio
- The ability to switch to low power modes
- Calibration stored within the module
- Calibration & configuration via radio telemetry
- Remote battery check

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Due to continual product development, LCM Systems Ltd. reserves the right to alter product specifications without prior notice.

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Mechanical Dimensions

All dimensions in millimeters

