

New Generation Telemetry Single Channel Analogue Output Module

Features



- Range of configurable analog outputs including 0-10V 4-20mA, 0-20mA, $\pm 10V$, $\pm 5V$
- Choice of enclosures depending on application.
- Simple configuration via PC using base station with Telemetry Toolkit software
- Integrated antenna.
- 1 year manufacturer's warranty



Introduction

The T24-AO1 and T24-AO1i provides a configurable analog output for the range of T24 acquisition modules.

The T24-AO1i is housed in a IP67 housing for industrial installation whilst the T24-AO1 is designed for desktop mounting with a reduced wireless range of 20 metres.

The output can be selected from the pre-calibrated voltage and current ranges. 0-10Volts, ± 10 Volts, 0-5Volts, ± 5 Volts, 0-20mA, 4-20mA both of which can be used in a 'sink' or source mode.

LED's in the T24-AO1 provides indication of the state of the radio link, remote battery life and remote status. The T24-AO1i uses open collectors outputs to relay this information

A digital Input allows for zeroing of the incoming data value.

The T24-AO1 modules are easily configured by the T24 Toolkit and a base station.

Specifications

General Radio

	Min	Typical	Max	Units
License		License 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 (9.8425 feet) above ground and T24-AO1 held at chest height pointing towards the T24-SA.

T24-AO1

Parameter	Minimum	Typical	Maximum	Units	Notes
External Supply voltage Range	9	12	36	Volts	
Operational Current	-	85	150	mA	
Operating Temperature Range	-40	-	85	Deg C	
Storage Temperature Range	-40	-	85	Deg C	
Reverse polarity Protection	-	-	-36	Volts	Maximum Supply level
Digital output Drive voltage			30	Volts	
Digital output Drive Current			20	mA	
Digital Input Load Impedance			100	Ohms	

Voltage output					
Resolution		16		Bits	
output gain stability	-	0.008	0.015	± % FS/°C	
output zero stability	-	0.006	0.015	± % FS/°C	
Short term stability (1 hr)	-	0.003	0.01	± % FS	
Long term stability (10k hrs)	-	0.03	0.1	± % FS	
Residual ripple		40		mV p-p	
Minimum load impedance	5000			Ohms	
Linearity	-	0.007	0.01	± % FS	
Bandwidth (-3dB)		TBD		Hz	

PRELIMINARY

Current output					
Resolution		16		Bits	
4-20mA output gain stability	-	0.0060	0.0120	± % FS/°C	
4-20mA output zero stability	-	0.005	0.0100	± % FS/°C	
Short term stability (1 hr)	-	0.006	0.018	± % FS	
Long term stability (10k hrs)	-	0.06	0.2	± % FS	
Residual ripple		0.032		mA p-p	
Settling time to ±0.5uA (thermal effects)	-	5	-	secs	
Maximum load impedance			500	Ohms	
Linearity	-	0.01	0.02	± % FS	
Bandwidth (-3dB)		TBD		Hz	

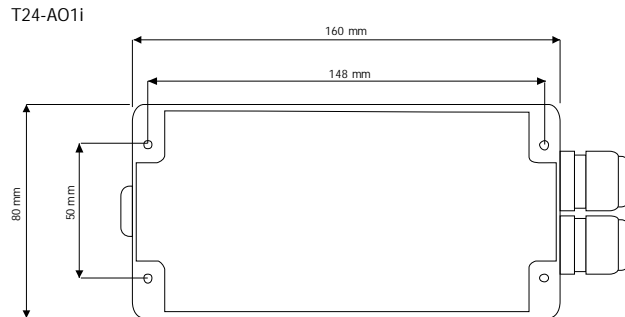
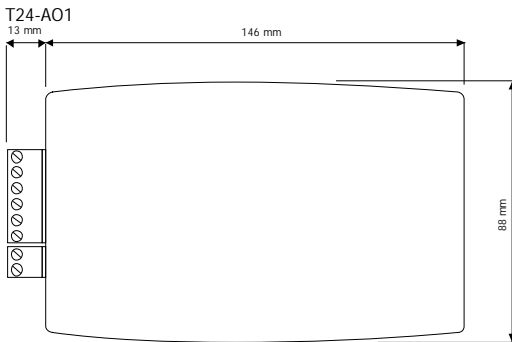
PRELIMINARY

Physical Dimensions & Materials		
T24-AO1	166 X 87 X 26mm	ABS plastic with a soft plastic grip
T24-AO1i	190 X 80 X 55 mm	Light grey ABS with IP65 cable glands. All electronics accessible by removing lid

Product Order Codes

T24-SAI	Strain Gauge Acquisition Module internal antenna	T24-HS	Handheld Reader Simple
T24-SAe	Strain Gauge Acquisition Module with socket for external antenna	T24-HA	Handheld Reader Advanced
T24-VAi	Voltage Acquisition Module internal antenna	T24-BSu	Base Station USB
T24-VAe	Voltage Acquisition Module with socket for external antenna	T24-BSi	Base Station Industrial
T24-IAi	Current Acquisition Module internal antenna	T24-SO	Serial Output
T24-IAe	Current Acquisition Module with socket for external antenna	T24-BC1	Battery Charger
T24-SAfi	'Fast' Strain Gauge Acquisition Module internal antenna	T24-ACM	Single Channel Acquisition Connectivity Module
T24-SAfe	'Fast' Strain Gauge Acquisition Module with socket for external antenna	T24-PR1	Thermal Printer
		T24-AO1	Desktop Analog Output Module
		T24-AO1i	Industrial Analog Output Module

Mechanical Dimensions



Approvals

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



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In the interests of continued product development, Mantracourt Electronics Limited reserves the right to alter product specifications without prior notice.

