Technical Bulletin

Preliminary

Model LT400

Miniature C-Band Radar Transponder

Airborne Telemetry Products

FEATURES

- High Power Output >400 Watts
- Long Life Triode Cavity Transmitter
- Tunable over 5.4 to 5.9 GHz
- Single or Double Pulse Interrogations
- Single Antenna Connector
- Open and Short Circuit Protection
- Reverse Polarity Protection
- Adjustable Code and Delay Selection
- Light Weight Less than 14.5 ounces

DESCRIPTION

The LT400 Series Radar Transponder is a miniature precision Radar augmentation device used to enhance the tracking capabilities of C-Band Radars. Utilized primarily for Range Safety functions, the LT400 is suitable for use in manned and unmanned vehicles. The Transponder is suitable for use in aircraft, missiles and target drones, both air- and sea- borne.

The design of the LT400 series utilizes the latest in modern devices and circuitry. It is all solid state, except for the triode oscillator, to provide a reliable product with consistent high quality.

QUALITY CONTROL AND PRODUCT ASSURANCE

The L-3 Communications Telemetry-East LT400 Transponder is manu-factured under the strict Quality Control procedures in accordance with the requirements of ISO 9001 and MIL-Q-9858A. Each assembled unit is fully tested to a comprehensive acceptance test procedure which includes full performance testing at thermal extremes.

MECHANICAL SPECIFICATIONS

Size:	4.00 x 3.00 x 1.30 inches (10.16 x 7.62 x 3.30 cm)
Volume:	15.6 cubic inches nominal Disp. (.000255 cubic meter)
Weight:	14.5 ounces maximum (420 gms.)
Duplexer:	Built-in circulator, 4 port ferrite
Antenna Connector:	SMA female
Power Connector:	MDM-9S

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature:	-20° to +80°C
Non Operating Temperature:	-65°C to +95°C
Vibration:	20g Sine, 17g Random
Shock:	125g, 11 µsec in any axis
Acceleration:	125g along any axis (3 min)
Altitude:	Sea level to 230,000 feet
Humidity:	Any, up to 100% including condensation
RFI/EMI:	MIL-STD-461

L3 communications

ELECTRICAL SPECIFICATIONS

Frequency Separation:	50 MHz preferred (narrower available)
Input/Output Impedance:	50 Ohm Nominal
Open/Short Circuit:	Antenna input protected within unit
Recovery Time:	50 µsec. maximum
Blanking:	During Transmit Pulse
Reverse Polarity:	Internal Series Diode
Voltage Transient:	Internal Power Zener
Input Voltage:	24 to 32 Vdc
Input Current:	0.8 Amps Max @ 3000 pps
Power Consumption:	0.4 Amps @ 28Vdc, 1000 pps
Power Dissipation:	10 Watts typical

TRANSMITTER

Frequency Range:	5.4 to 5.9 GHz (*) (†)
Frequency Selection:	Continuous Mechanical Screw
Modulation Type:	AM Pulse
Output Power:	Factory Set (>400 Watts)
Output Device:	Triode Cavity Oscillator
Frequency Stability:	± 3.0 MHz ± 50 KHz/°C
Pulse Width:	0.5 ± 0.1 µsec.
Pulse Width Jitter:	0.01 µsec.
Pulse Rise Time:	0.1 µsec.
Pulse Fall Time:	0.2 µsec.
Power Spectrum:	< 3 MHz/0.5 µsec at ¼ dB points
PRF:	Up to 2600 pps or pgps
Reply Delay:	1.0 to 6.0 µsec. (*)
Delay Variation:	± 0.1 µsec. max from -65 dBm to +20 dbm
Delay Jitter:	± 0.03 µsec. max from -65 dBm to +20 dbm

RECEIVER

Design:	TRF
Frequency Range:	5.4 to 5.9 GHz (*) (†)
Frequency Selection:	Screw Adjustable Poles
Sensitivity:	-65 dBm minimum (-70 dBm manual)
Dynamic Range:	-65 dBm to 20 dBm @ 99% reply
Frequency Stability:	± 5.0 MHz
Bandwidth:	11 MHz to 15 MHz(†)
Pulse Decoder:	Single or Double
Pulse Width (Single):	0.25 to 5.0 µsec. (*)
Pulse Width (Double):	0.25 to 5.0 µsec. (*)
Double Pulse Spacing: (*)(†)	Adjustable 3.0 to 12.0 µsec.
Random Triggering:	10 pps Max

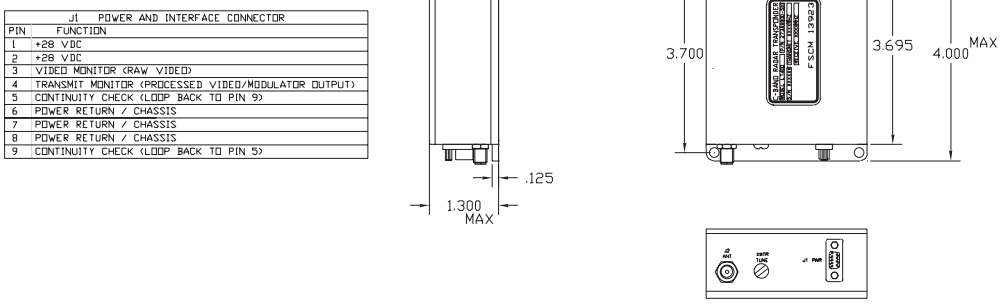
ORDERING INFORMATION

Contact your nearest L-3 Communications Telemetry-East Sales Representative or the L-3 Communications Telemetry-East Sales Office in Newtown, PA. Specify Model LT400 Transponder.

Part No. 27348000-501

Field Adjustable (†)
Factory Set (*)

LT400 Outline Drawing



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