

Flight Termination Receiver/Decoder

Model HFTR60-1

3061 Industry Drive, Lancaster, PA 17603-4025 U.S.A. • Tel 717-397-2777 • www.herley.com • sales@herley.com

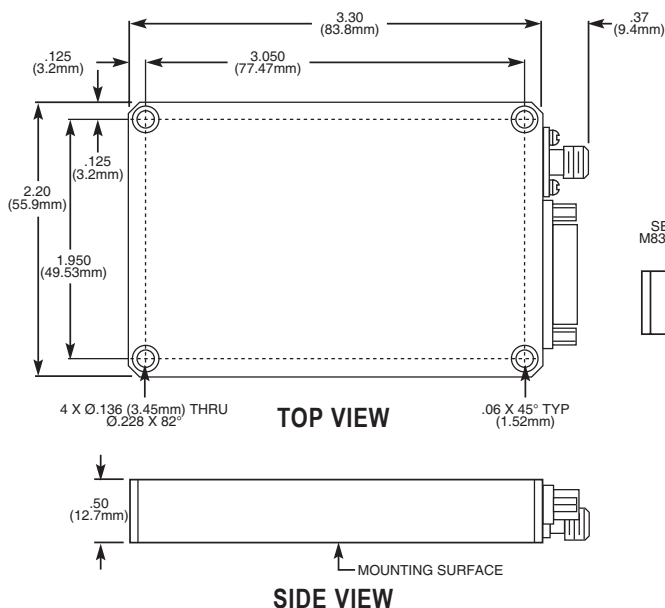


FEATURES:

- Covers full 406 to 450 MHz band
- 4 tone decoders
- All solid-state design
- Over 2 Amp dc, 7.5 Amp pulsed output current capability
- High sensitivity receiver
- Small, less than 3.7 cubic inches
- Lightweight, less than 5 ounces
- No RF/IF tuning elements
- Standard range safety logic
- Reverse polarity power protection

The HFTR60-1 Flight Termination Receiver/Decoder is a four (4) tone unit designed for missile and target applications. This unit is compact, and desirable for usage where size and weight are important considerations. The HFTR60-1 is a single-conversion receiver, with phase-locked loop tone decoders and advanced phase lock loop local oscillator. It is designed to the requirements of both RCC313-94 and RCC319-99 documents.

The design of the HFTR60-1 employs the latest in devices, circuitry, and modern production processes to provide a reliable product with extremely long operating life. This unit is intended for programs and applications with stringent environmental, EMI, and reliability requirements.



Pin	Function
1	+28 Vdc
2	DC Return-Optional Command
3	Power Return
4	DC Return-Terminate Command
5	DC Return-Monitor Command
6	Failsafe Enable (FSE)
7	Failsafe Input
8	TERMINATE Command
9	Audio Output (optional)
10	OPTIONAL Command
11	Low Voltage Sense
12	Tone C Monitor
13	Case Ground
14	+28 Vdc Power
15	Failsafe Telemetry
16	Tone B Monitor
17	Tone A Monitor
18	DC Return-Arm Command
19	Failsafe Output
20	TERMINATE Command
21	Tone D Monitor
22	MONITOR Command
23	ARM Command
24	Signal Strength Telemetry
25	Signal Strength TM Return

Typical Outline - does not show all features - not to be used for generation of control drawings. For detailed outline drawing of a specific part number please contact Herley Industries, Inc.

EXPORT SALES OF THIS PRODUCT ARE SUBJECT TO U.S. GOVERNMENT APPROVAL. SALES WILL NOT BE APPROVED TO COUNTRIES PROHIBITED BY THE INTERNATIONAL TRAFFIC IN ARMS REGULATIONS (ITAR). THE INFORMATION IN THIS DOCUMENT IS BELIEVED TO BE ACCURATE AND RELIABLE, BUT IS NOT GUARANTEED AND IS SUBJECT TO CHANGE WITHOUT NOTICE. PERFORMANCE DATA REPRESENTS TYPICAL CHARACTERISTICS AND NOT SPECIFICATIONS AS ACTUAL, INDIVIDUAL PRODUCT PERFORMANCE MAY VARY. THE DATA SHOULD BE USED FOR BASIC INFORMATION ONLY. NO CLAIMS OR WARRANTIES ARE MADE AS TO THE APPLICATION OF HERLEY PRODUCTS OR THEIR SUITABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE. NO LIABILITY IS ASSUMED BY HERLEY INDUSTRIES, INC. FOR ITS USE.

Flight Termination, Receiver/Decoder - Model HFTR60-1

Versions: This product is available in several versions. Call to discuss other variations, or your particular requirements.

Product Numbers:

P/N 570006-xxx (see below for ordering options)

ELECTRICAL

FREQUENCY RANGE: 406 TO 450 MHz
(FACTORY PRESET TO CUSTOMER SPECIFIED FREQUENCY)
IMPEDANCE: 50 OHMS NOMINAL
VSWR: LESS THAN 2:1
REVERSE POLARITY PROTECTION: BUILT-IN
INPUT VOLTAGE: +22 TO +36 Vdc
INPUT CURRENT: 210 mA MAX. AT 22 VDC 150 mA TYP AT 36 VDC
TELEMETRY OUTPUTS: SIGNAL STRENGTH, 3 OR 4 TONE MONITORS,
FAILSAFE AND LOW VOLTAGE SENSE
COMMAND OUTPUTS: 4 SOLID-STATE OUTPUTS
COMMAND OUTPUTS, VOLTAGE DROP UNDER LOAD:
ARM, MONITOR, OPTIONAL: 2VDC MAXIMUM AT 1 AMP
3.5VDC MAXIMUM AT 2 AMPS
TERMINATE: 4VDC MAXIMUM AT 7.5 AMPS, 100 MSEC
OUTPUT LEAKAGE CURRENT: 50 MICROAMPS MAXIMUM
ISOLATED RETURNS: SIGNAL STRENGTH OUTPUT ISOLATED FROM DC
RETURN AND CHASSIS GROUND
RF/EMI: MEETS MIL-STD-461C, TESTS; CE07, CS06. MEETS
MIL-STD-461D, TESTS; CE102, CE106, CS101, CS103, CS104,
CS105, CS114, CS116, RE102 AND RS103

PHYSICAL

SIZE: 3.3 x 2.2 x .5 INCHES (8.4 x 5.6 x 1.3 CM), LESS CONNECTORS
WEIGHT: 5 OUNCES MAXIMUM
ANTENNA CONNECTOR (J1): RF INPUT SMA
POWER AND SIGNAL CONNECTOR (J2): 25-PIN MICRO-D SOCKET
M83513/04-D05N

ENVIRONMENTAL

RANDOM VIBRATION (ATP): 0.1 g²/Hz (12 GRAMS)
RANDOM VIBRATION (QUAL): 35.87 GRAMS
TEMPERATURE, OPERATING (ATP): -40°C TO +71°C STANDARD
TEMPERATURE, OPERATING (QUAL): -54°C TO +85°C
TEMPERATURE, STORAGE (QUAL): -62°C TO +95°C
SHOCK (QUAL): 100 g's, 11 MSECS, AND 1100G, 0.5 MSEC, HALF-SINE
PYROTECHNIC SHOCK (QUAL): 9500 g's PEAK
ALTITUDE (QUAL): UNLIMITED
HUMIDITY (QUAL): 95%
ACCELERATION (QUAL): 120 g's

RECEIVER

DESIGN: SINGLE CONVERSION SUPERHETERODYNE
SENSITIVITY: -107 TO -116 dBm
FREQUENCY BAND: 406 TO 450 MHz
FREQUENCY TUNING: SYNTHESIZED LOCAL OSCILLATOR
TUNING ACCURACY: 0.005%
DYNAMIC RANGE: -107 dBm TO +13 dBm
OPERATING BANDWIDTH: ±45 kHz MINIMUM
IF BANDWIDTH: 3 dB @ ±90 kHz MINIMUM
SELECTIVITY: 60 dB @ ±180 kHz MAXIMUM
IMAGE REJECTION: GREATER THAN 60 dB
CAPTURE RATIO: GREATER THAN 0.8
AM REJECTION: 100% AT 100 μ V INPUT
FREQUENCY DEVIATION: ±30 kHz PER TONE, NOMINAL
SIGNAL STRENGTH MONITOR OUTPUT: No RF 0.5VDC ±0.25VDC
MONOTONICALLY INCREASES TO 4.5VDC MINIMUM AT -60 TO -50dBm
INPUT. MAXIMUM VOLTAGE 4.75VDC ±0.25VDC

DECODER

COMMAND RESPONSE TIME: 4 TO 25 MSEC (5 MSEC TYPICAL)
NUMBER OF TONE DECODERS: 3 OR 4
SIMULTANEOUS USABLE TONES: 3 OR 4
TONE MONITOR OUTPUTS (INTO 10K OHM): ACTIVATED 4.5VDC
±0.5VDC, UNACTIVATED 0.0VDC ±0.5VDC
TONE DECODER BANDWIDTH: ±1% MINIMUM AT 2 DB, ±4% MAX AT 14
DB
ADJACENT TONE REJECTION: REJECTS SIMULTANEOUS ADJACENT TONES
AT UP TO ±50 kHz DEVIATION
DECODER THRESHOLD DEVIATION: ±12 kHz, NOMINAL
FAILSAFE OPTIONS:
LOSS OF TONE A AND LOW VOLTAGE FAILSAFE: 8 SEC ±2 SEC
STD ON FAILSAFE UNITS
LOW VOLTAGE SENSE: 23.0VDC ±0.5VDC TYPICAL ON FAILSAFE
UNITS.
REDUNDANT FAILSAFE: 2 RECEIVER OPERATION

OPTIONS

**NO FAILSAFE, STD FAILSAFE, COMMANDED AND STD FAILSAFE
OPERATING TEMPERATURE TO -54°C AND +85°C.**
COMMON RETURNS: SIGNAL STRENGTH AND COMMAND RETURNS
ALL RETURNS CONNECTED TO CHASSIS.
AUDIO OUTPUT: 7kHz TO 32 kHz, 155mV TO 310mV RMS

When ordering, please specify receiver frequency, 4 tone configuration,
failsafe option including loss of Tone A timeout (sec), and any additional options.

EXPORT SALES OF THIS PRODUCT ARE SUBJECT TO U.S. GOVERNMENT APPROVAL. SALES WILL NOT BE APPROVED TO COUNTRIES PROHIBITED BY THE INTERNATIONAL TRAFFIC IN ARMS REGULATIONS (ITAR).
THE INFORMATION IN THIS DOCUMENT IS BELIEVED TO BE ACCURATE AND RELIABLE, BUT IS NOT GUARANTEED AND IS SUBJECT TO CHANGE WITHOUT NOTICE. PERFORMANCE DATA REPRESENTS TYPICAL
CHARACTERISTICS AND NOT SPECIFICATIONS AS ACTUAL. INDIVIDUAL PRODUCT PERFORMANCE MAY VARY. THE DATA SHOULD BE USED FOR BASIC INFORMATION ONLY. NO CLAIMS OR WARRANTIES ARE
MADE AS TO THE APPLICATION OF HERLEY PRODUCTS OR THEIR SUITABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE. NO LIABILITY IS ASSUMED BY HERLEY INDUSTRIES, INC. FOR ITS USE.