

# FSR1 FSK Data Receiver

## A Very Compact Data Receiver!



## Design Features

- 1.2 Cubic Inch Package (1.25"x2.5"x0.375")
- Weighs 1.2 oz.
- Low Current Draw (Extends Battery Life)
- Low Noise Figure (More Range)
- Port Settings Configurable to Pelco-D and Other Standard UART Settings
- Full Band Channelization
- 2 Frequency Selection Modes
- RS232, RS422, or 3.3V TTL Data and/or Comms Formats
- J-STD-001D Class 3 Assembly (Medical/Aerospace)

## FSR1 Series

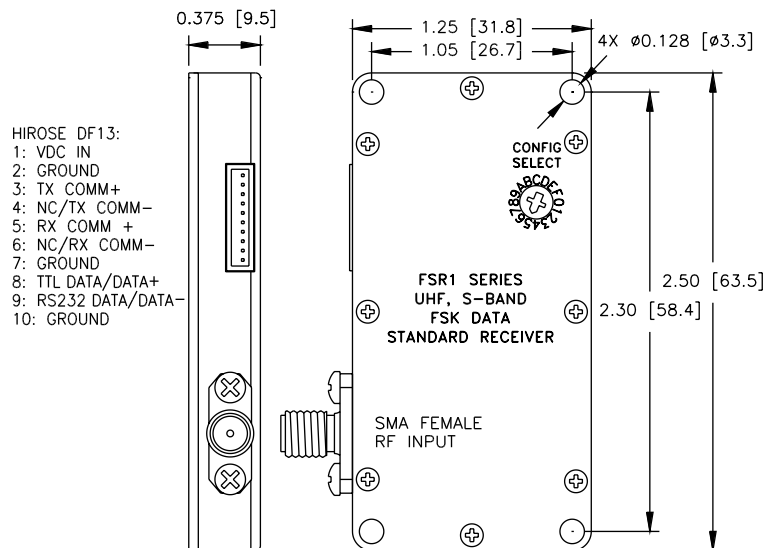
AMP's FSR1 Series 1.2 cubic inch FSK Data receivers with matching FMT1 FSK Data transmitters create a miniature, robust, cost-effective solution for remotely controlling aerial and ground vehicles, communicating with remote sites, controlling PTZ cameras, and other serial applications with data rates of up to 115.2 kbps.

Receiver carrier frequency, input data type, and data port settings are user-configurable. A 16-position switch accessible through the chassis lid provides pre-programmability of up to 15 configurations. The 16th switch position allows real-time remote control and programming. Data port settings may be configured to Pelco-D or other standard serial UART protocols.

FSR1 receivers are engineered to reduce power consumption for significantly longer battery life and to reduce noise figure resulting in increased range.

AMP's FSK transmitters and receivers may be ordered with rugged aluminum chassis and military-grade connectors as illustrated or as stand-alone PCBs allowing for custom installation and integration.

FSR1 receivers are military grade products designed and built to withstand harsh environments. This series is ideal for applications requiring high quality data transmission in a compact, rugged package.



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## RF Characteristics

Frequency Range (Specify):	433.0-434.8 MHz	
(Other Ranges Available)	868.0-870.0 MHz	
	902.0-928.0 MHz	
	2400-2500 MHz	
Frequency Step Size:	< 1 GHz Models	100 kHz
	> 1 GHz Models	500 kHz
Frequency Selection (Specify):	Full Band Channelized - Remote Control Only or Remote/Programmable Switch	
Maximum RF Input:	+10 dBm Without Damage	
Input Impedance:	50 Ohms Nominal, VSWR 2:1 Maximum	
Sensitivity:	-101 dBm Typical @ 57600 Baud for 10 <sup>-3</sup> BER	
	-96 dBm Typical @ 115200 Baud for 10 <sup>-3</sup> BER	
Image Rejection:	50 dB Minimum	

## LO/IF Characteristics

LO Stability:	±5 ppm Over -20°C to +60°C	
IF Frequency:	< 1 GHz Models	DC or 200 kHz Single IF - Baud Dependent
	> 1 GHz Models	868 MHz First IF, DC or 200 kHz Second IF - Baud Dependent
IF Bandwidth:	< 1 GHz Models	200 kHz or 1200 kHz - Baud Dependent
	> 1 GHz Models	2 MHz First IF, 200 kHz or 1200 kHz Second IF - Baud Dependent
Harmonic and Spurious Level:	< -25 dBm	

## FSK Demodulator and Data Characteristics

Demodulator Type:	BFSK Correlator, Positive Logic	
Expected Deviation:	50 kHz or 400 kHz Nominal, Dependent on Bit Rate	
Post-Demod Filter:	Digital LPF Set to 0.75 X Bit Rate	
Bit Rate (Specify):	Up to 57600 bps (All Frequencies) or 115200 bps	
Signalling Type (Specify):	RS232/3.3V TTL, or RS422	
Output Impedance:	300 Ω (RS232 or TTL), 1 kΩ Differential (RS422), 12 kΩ Differential (RS485)	
Port Settings:	8 Data Bits, Selectable Baud / Parity / Stop Bits	

## Configuration Interface Characteristics

Interface Type:	Two-Way UART	
Signalling Type (Specify):	RS232, RS422, or 3.3V TTL	
Interface Parameters:	9600/8/1/None/None (Baud/Data Bits/Stop Bits/Parity/Handshake)	

## Power Requirements

Input Voltage:	+9 to +16 Vdc, Reverse Polarity Protected	
Current Draw:	< 1 GHz Models*	40 mA
(Specified Typical @ 12V Input)	> 1 GHz Models	100 mA

\* 433.0-434.8 MHz models with 115,200 bps bit rate have the same current draw as the > 1 GHz models.

## Mechanical

Material (Specify):	CNC Machined T6061-T6 Nickel Plated Aluminum or OEM PCB	
Finish (Specify):	Nickel Plated or Gold Iridite	
Dimensions:	1.25" W x 2.50" L x 0.375" H	
Weight:	1.2 oz. Typical	
Connectors:	RF Input:	SMA Female
	DC Supply, Data Out, Comms: Hirose DF13-10P-1.25DS, Mate Supplied	

## Environmental

Temperature (Operating):	-20°C to +60°C	
Acceleration:	100 g, 3 Axis	
Altitude:	Unlimited	
Humidity:	Up to 95% @ Any Temperature Forming Frost or Condensation	

Note – FSK transmitters/receivers available as unpackaged PCB for reduced size and weight. When supplied this way, connectors are DF13-10P-1.25DSA for DC, Data, and Comms. RF Connector is edge-mount SMA. Contact factory for dimensions and weight of unpackaged PCBs.