

## Description



Fractional-N PLDRO using  
External Reference



Fractional-N PLDRO with  
Internal OCXO

The PLDRO (Phase Locked Dielectric Resonator Oscillator) provides the ultra-low phase noise and an excellent frequency stability when it is phase-locked to a clean and stable crystal reference signal. The PLDRO provides ideal signal for commercial and military systems that require ultra-low phase noise, low spurious, and high frequency stability.

Our PLDRO series are available in four series: Single Loop PLDRO, Dual Loop PLDRO, Variable Frequency PLDRO, and Fractional-N PLDRO.

The Fractional-N PLDRO is an innovative phase locked dielectric resonator oscillator that solves the reference frequency dependence of the output frequency. This PLDRO series can generate any frequency in 1 KHz steps within 5 GHz to 28 GHz and has the same phase noise performance as Single Loop PLDRO.

## Features

- Can generate any frequency in 1 KHz steps within 5 GHz to 28 GHz
- Ultra Low Phase Noise
- Low Spurious
- Phase-Locked Alarm
- Compact Housing
- Rugged Construction

## Options

- 17 dBm (typ.) Output Power
- Extended Operating Temperature: -20 °C to +70 °C
- 0.1 KHz Frequency Resolution
- Field Replaceable SMA-Jack
- Customized Outlines
- Laser Marking

## Applications

- Radar Systems
- VSAT/Satellite Communication Systems
- Test Equipment
- Microwave Transmitters & Receivers
- Cable TV Links (CATV)
- LMDS
- Missile Guidance
- Local Area Networks (LAN)

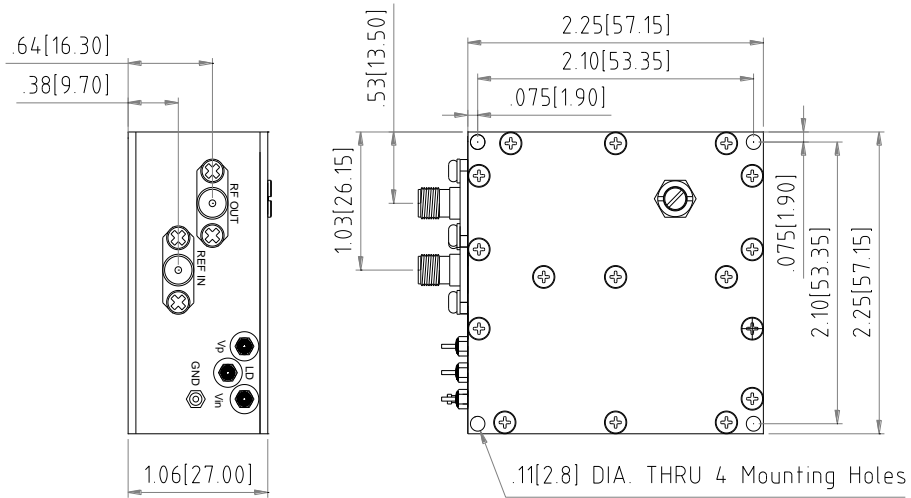
## Specifications

Parameters		Specifications			
Output Frequency		5 GHz to 28 GHz			
Frequency Step		1 KHz			
Output Power		13 dBm (typ.)			
Phase Noise (dBc/Hz)	Frequency	6 GHz	10 GHz	13 GHz	26 GHz
	Offset				
	100 Hz	-92	-87	-84	-78
	1 KHz	-112	-108	-105	-99
	10 KHz	-120	-117	-110	-104
	100 KHz	-123	-120	-116	-110
External Reference	1 MHz	-139	-135	-131	-125
	Frequency	50 MHz or 100 MHz			
Input Power		0±2 dBm			
Internal OCXO	Frequency	50 MHz or 100 MHz			
	Input Power	10±2 dBm			
Harmonics		-30 dBc (typ.), -20 dBc (max.)			
Sub-harmonics (N*Fout/2, N odd)		-25 dBc (typ.), -15 dBc (max.)			
Frequency Stability		Same as the Reference			
Spurious	< fo ± 300 MHz	-75 dBc (typ.), -70 dBc (max.)			
	> fo ± 300 MHz	-80 dBc (typ.), -75 dBc (max.)			
Pulling (3:1 VSWR) (max.)		Will not break lock			
Output Impedance		50 Ω			
Supply Voltage		12±0.5 VDC			
Current Consumption		Consult Factory			
Connectors	RF Output (RF OUT)	SMA-Jack			
	Reference (REF IN or RF_OUT)	SMA-Jack			
	Supply Voltage (Vin)	EMI Feed-thru			
	Phase Voltage (Vp)	EMI Feed-thru			
	Phase Lock-Detect (LD) <b>Note 1</b>	EMI Feed-thru			
	GND	Turret Thread Mount Terminal			
Housing Size (W x L x H)	Dual Bed Housing	2.25"[57.15] x 2.25"[57.15] x 1.06"[27]			
	Extended Dual Bed Housing	2.25"[57.15] x 3.15"[80] x 1.30"[33]			
Environmental Conditions	Operating Temperature	0 °C to 60 °C			
	Storage Temperature	-20 °C to 70 °C			

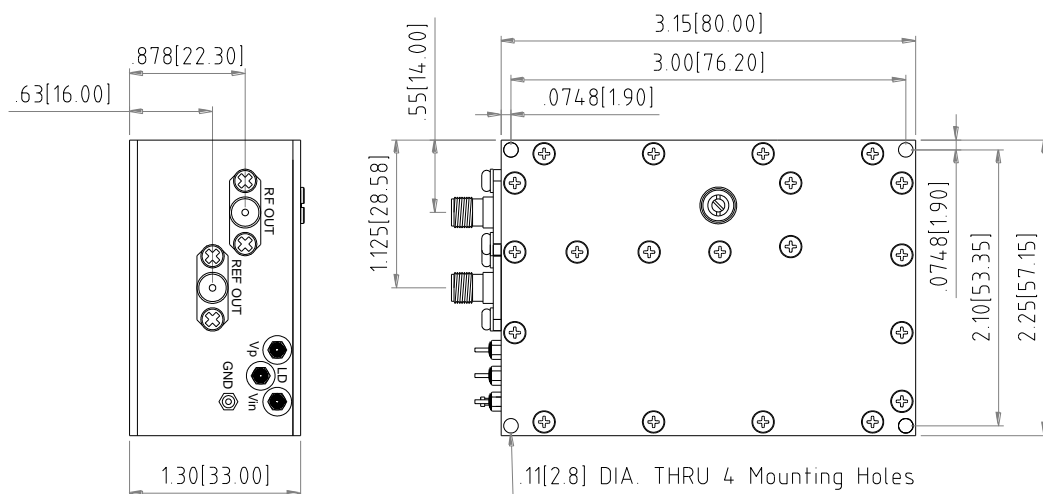
- Note 1 Phase Lock-Detect (LD)
- 3.3 V when phase locked
  - 0 V when phase unlocked

## Outline Drawing

Dimensions shown in brackets [ ] are in millimeters.



Dual Bed Housing



Extended Dual Bed Housing

## Ordering Information

**w**PLDRO-**R**xxxx-**y**...**y**-**P**zz-**aa**

- **w**: Product Categories
  - . S (Single Loop PLDRO)
  - . D (Dual Loop PLDRO)
  - . F (Fractional-N PLDRO)
- **xxxx**: Reference Frequencies (MHz)
  - . Ixxx: Internal, xxxMHz
  - . Exxx: External, xxxMHz
- **y...y**: Output Frequency (MHz)
- **zz**: Output Power (dBm)
- **aa**: Housing types
  - . SB (Single Bed Housing)
  - . DB (Dual Bed Housing)
  - . HS (Hermetically Sealed Housing)
  - . NP (Number of Ports)

## Examples

**F**PLDRO-**RI**50-**9936.951**-**P**13-**DB**

- . Product Category: Fractional-N PLDRO
- . Reference Frequency: Internal, 50 MHz
- . Output Frequency: 9,936.951 MHz
- . Output power: 13 dBm
- . Extended Dual Bed Housing

**F**PLDRO-**RE**100-**7092.35**-**P**15-**DB**

- . Product Category: Fractional-N PLDRO
- . Reference Frequency: External, 100 MHz
- . Output Frequency: 7,092.35 MHz
- . Output power: 15 dBm
- . Dual Bed Housing

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