

Description

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 Single Loop PLDRO is a phase locked dielectric resonator oscillator whose output frequency is generated by a single phase locked loop. This PLDRO series consists of various types of PLDROs like shown below.



Single Bed Housing
PLDRO



Hermetically Sealed
PLDRO



Dual Bed Housing
PLDRO



Dual channel PLDRO



Triple channel PLDRO



PLDRO with Internal
OCXO

Features

- Ultra Low Phase Noise
- Low Spurious
- Phase-Locked Alarm
- Wide Supply Voltage
- Low Current Consumption
- Compact Housing
- Rugged Construction

Options

- Multi-channel Output
- 17 dBm (typ.) Output Power
- Supply Voltage: 24 VDC or 28 VDC
- Extended Operating Temperature: -20 °C to 70 °C or -40 °C to 70 °C
- 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)
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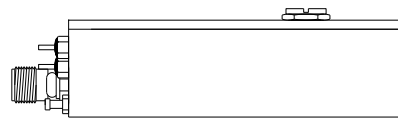
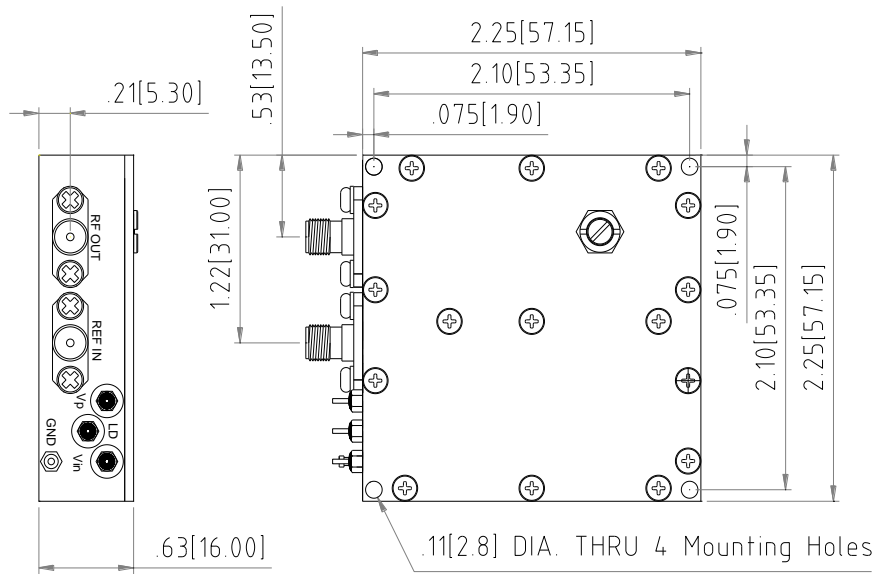
Specifications

Parameters		Specifications			
Output Frequency		5 GHz to 28 GHz			
Number of Output Channels		1, 2, or 3			
Output Power	Single Channel PLDRO	13 dBm (typ.)			
	Dual Channel PLDRO	13 dBm (typ.)			
	Triple Channel PLDRO	12 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
	1 MHz	-139	-135	-131	-125
External Reference	Frequency	10 MHz to 500 MHz			
	Input Power	0±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 or Hermetic Feed-thru			
	Phase Voltage (Vp)	EMI Feed-thru or Hermetic Feed-thru			
	Lock-Detect (LD) Note 1	EMI Feed-thru or Hermetic Feed-thru			
	GND	Turret Thread Mount Terminal			
Housing Size (W x L x H)	Single Bed Housing, Hermetically Sealed Housing, and Dual Channel Housing	2.25"[57.15] x 2.25"[57.15] x .63"[16]			
	Dual Bed Housing	2.25"[57.15] x 2.25"[57.15] x 1.06"[27]			
	Triple Channel Housing	2.25"[57.15] x 2.75"[69.85] x .63"[16]			
Environmental Conditions	Operating Temperature	0 °C to 60 °C			
	Storage Temperature	-20 °C to 70 °C			

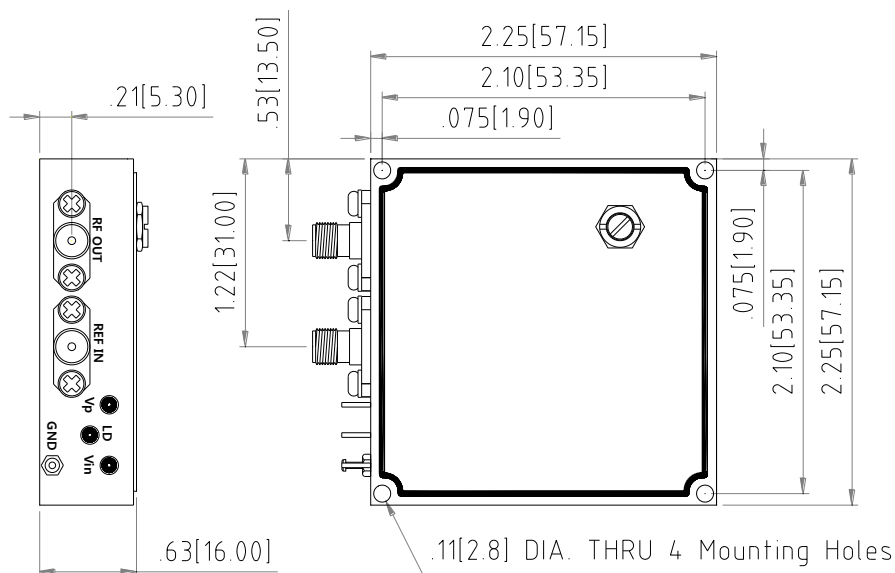
- Note 1 Phase Lock-Detect (LD)
- 3.3 V when phase locked
 - 0 V when phase unlocked

Outline Drawing

Dimensions shown in brackets [] are in millimeters.



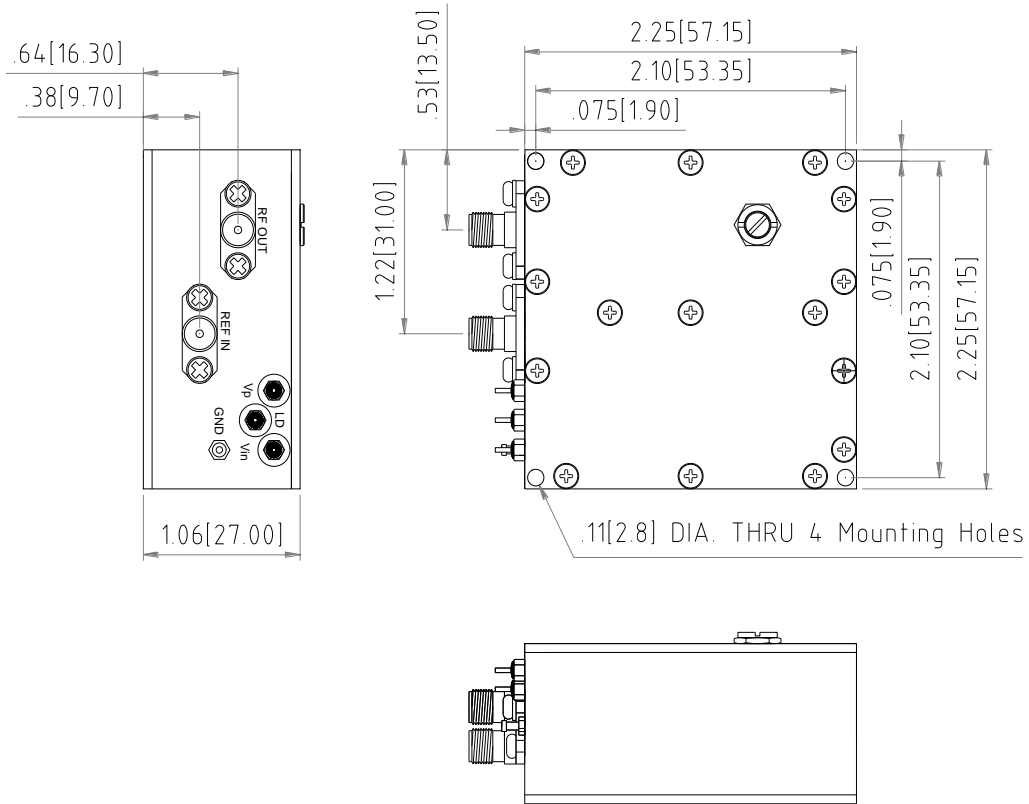
Single Bed Housing



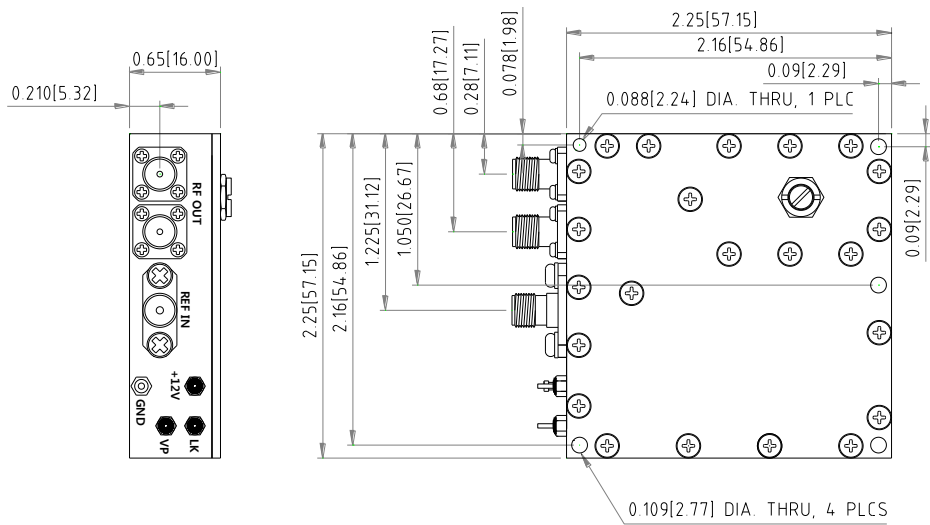
Hermetically Sealed Housing

Outline Drawing

Dimensions shown in brackets [] are in millimeters.



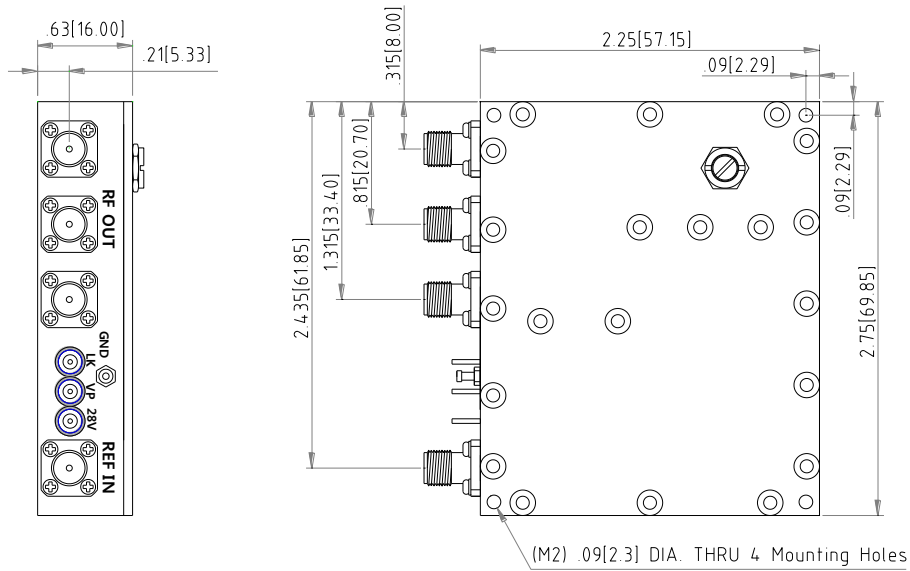
Dual Bed Housing



Dual Channel Housing

Outline Drawing

Dimensions shown in brackets [] are in millimeters.



Triple Channel Housing

Ordering Information

wPLDRO-**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

SPLDRO-**RE**10-**8150**-**P**13-**SB**

- . Product Category: Single Loop PLDRO
- . Reference Frequency: External, 10 MHz
- . Output Frequency: 8,150 MHz
- . Output power: 13 dBm
- . Single Bed Housing

SPLDRO-**RE**100-**12300**-**P**12-**3P**

- . Product Category: Single Loop PLDRO
- . Reference Frequency: External, 100 MHz
- . Output Frequency: 12,300 MHz
- . Output power: 12 dBm
- . Triple Channel Housing

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