



Model FE-4175A Series

HIGH PERFORMING DIGITALLY CONTROLLED
VOLTAGE CONTROLLED CRYSTAL
OSCILLATOR (VCXO) WITH VERY LOW PHASE
NOISE AND EXCELLENT SHORT-TERM AND
TEMPERATURE FREQUENCY STABILITY

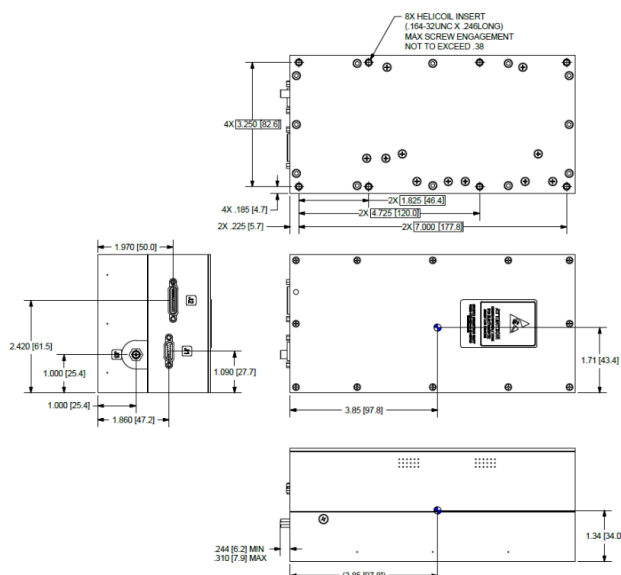
PARAMETER		UNIT
Output Frequency (Sine Wave)	10.0	MHz
Amplitude Into 50 ohms	+17.5	dBm
Aging	±5x10-11	/Day
Short Term Stability (ADEV)		
0.1 < τ < 1	≤ 4.0E-12	
1 < τ < 100	≤ 3.0E-13	
Phase Noise @ 10 MHz (Stationary):		
@ 1 Hz offset	≤ -110	dBc/Hz
Between 1 Hz and 1000 Hz offset	-10	dB/dec
@ 1000 Hz offset	≤ -140	dBc/Hz
Spurs		
5 kHz to 10 MHz off carrier	≤ -85	dBc
10 MHz to 20 MHz off carrier	≤ -50	dBc
3 rd Harmonic Frequency	≤ -50	dBc
5 th Harmonic Frequency	≤ -70	dBc
Retrace (On 24hrs-Off 48hrs-On 24hrs)	≤ ±4.0E-9	
Coarse Adj Min Freq Range	±1.8	Hz
Coarse Adj Min LSB Freq Change	< 250	uHz

PARAMETER		UNIT
Fine Adj Min Freq Range	±0.01	Hz
Fine Adj Min LSB Freq Change	< 1	uHz
Temperature Ranges (at Baseplate):		
Freq Stability Temp (any 3°C window)	+6 to +31	°C
Operating Temperature	-34 to +86	°C
Storage Temperature Range	-40 to +95	°C
Frequency Stability vs. Temperature		
+6°C to +31°C (any 3°C window)	4.0E-11	/°C
Warm-up Time to 1.0E-10 @ 25 °C	≤ 15	min
Serial Communication (LVDS)		
Input Power:	+24	Vdc
- Power (Maximum @ 18.5°C)	13.0	W
- Power (Steady State @ 18.5°C)	8.5	W
Frequency Stability vs. Input Voltage	< 8.0E-12	/V
Magnetic Field (≤ 5 Gauss DC Mag Field)	≤ 1.0E-11	/Gauss
Dimensions: 3.62" x 7.76" x 2.96"		in
Weight	2.5	lbs

CONNECTOR DESIGNATIONS:	DESCRIPTION
J1 "D" CONN. MICRO-PLUG, PIN CONTACTS, 15 POSITION, M83513/03-B11N	POWER TELEMETRY
J2 "D" CONN. MICRO-PLUG, PIN CONTACTS, 25 POSITION, M83513/03-D11N	SERIAL LVDS
J3 SMA FEMALE, M39012/61-3001	10 MHz SINE +17.5 dBm

PIN #	FUNCTION
1	24V
2	24V RETURN
3	SPARE
4	OVEN TEMP
5	RF PWR
6	SPARE
7	SPARE
8	CHASSIS TEMP
9	24V
10	24V RETURN
11	SPARE
12	SPARE
13	RF PWR RETURN
14	SPARE
15	OVEN BRIDGE

PIN #	FUNCTION
1	CLOCK A+
2	GND
3	DATA A+
4	CTL A+
5	GND
6	OUT A+
7	ACTIVE A
8	OUT B+
9	GND
10	CTL B+
11	DATA B+
12	GND
13	CLOCK B+
14	CLOCK A-
15	DATA A-
16	GND
17	CTL A-
18	OUT A-
19	DIGITAL GND
20	ACTIVE B
21	OUT B-
22	CTL B-
23	GND
24	DATA B-
25	CLOCK B-



Specifications subject to change without notice

Revision: August 2020