3091A

Outdoor Enclosure for 2991 L–Band Links

SATCOM



EMCORE's Model 3091A Outdoor Enclosure (ODU) provides power and environmental protection for up to four 2991 transmitters or receivers. With a weather-tight seal and all the necessary internal connections and mounting hardware, these ODU's may be placed directly at the antenna to provide greater flexibility in design.

Two AC to DC power supplies drive the four transmitters or receivers and provide enough additional current for four LNB's. Further, these power supplies are redundant, hot swappable and monitored with a summary alarm, so if one fails the facility staff can replace it and still maintain 100% signal availability. The individual transmitters and receivers also are hot swappable, thus can be replaced or reconfigured without upsetting any of the other RF paths.

Features

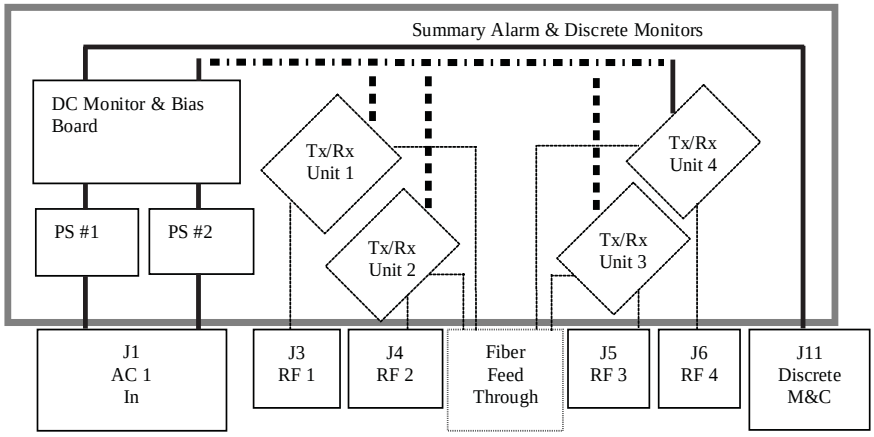
- Weatherized
- Summary Alarm
- Redundant Power Supplies
- AC input of 95 to 264 VAC
- LNB Power
- Hot-swappable PS, Tx, & Rx
- Modular, Field-configurable
- Lightning Protected RF
- Discrete M&C Interface
- Local RS-232 Interface

Applications

- TVRO
- Broadcast
- Earth Stations
- Headends
- VSAT
- GPS

Performance Highlights

	Minimum	Typical	Maximum	Units
AC Inputv	95	-	240	VAC
LNB Power, total for all outputs	- -	24 -	- 1.2	V A
Ambient Air Temperature	-30	-	50	˚C



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Environmental

- Ambient outside air temperature: -30 to 50°C
- Storage temperature: -40°C to +85°C
- Start Up Temperature: 0°C min
- Humidity, non-condensing: 5 to 95%
- Absolute Maximum Rating (damage may o cur beyond these limits) < -30°C and > +70°C

Electrical

AC Power Input (Connector J1)
Compatible with 0.5 inch cable diameters and styles.

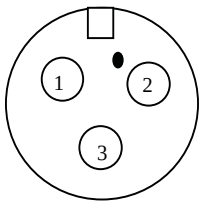
Parameter	Minimum	Type	Maximum	Unit
AC Voltage	95	-	240	VAC
AC Current	-	-	2	AMPS

CircuitBreakerSwitch:5amptrigger

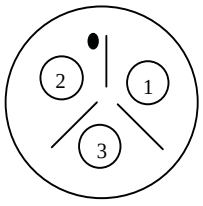
Pin	Function
1	Line
2	Neutral
3	Ground

Mating Connector for J1

Face View (Mating Side)



Rear View (Solder Side)



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Controls and Monitor (J11)

Pin	Function
1	Ground
2	Summary Alarm
3	Summary Alarm
4	Power Supply–A
5	Power Supply–A
6	Power Supply–B
7	Power Supply–B
8	Unit 1
9	Unit 1
10	Unit 2
11	Unit 2
12	Unit 3
13	Unit 3
14	Unit 4
15	Unit 4
16	No Connect

· Relays are all normally closed.
· Relays open for alarm condition or lack of power.
· Relays can pass 2 Amps.

LEDs (Inside unit)

RF / Opt Pwr Unit 1
RF / Opt Pwr Unit 2
RF / Opt Pwr Unit 3
RF / Opt Pwr Unit 4
Summary Alarm
Door Open
Pwr Sply A
Pwr Sply B

- RF / Opt Power- Unit 1, 2, 3 or 4
  · Green = OK
  · Red = Fault
- For Transmitter: RF / Opt LED indicates "Low RF Power".
- For Receiver: RF / Opt LED indicates "Low Optical Power".

Switches

Mechanical switches S1 – S8 allows the user to select if 2991 is present & if Tx or Rx.

Transmitter and Receiver Equipment

The 2991 equipment is ordered separately and can either be factory or field installed.

Transmitter Model Number	Description
2991TL-F7-SA1303	Tx, 75Ω Type "F", Low Gain, mounting plate, coaxial cable, lightning protector and dc harness
2991TS-F7-SA1303	Tx, 75W Type "F", Standard Gain, mounting plate, coaxial cable, lightning protector and dc harness

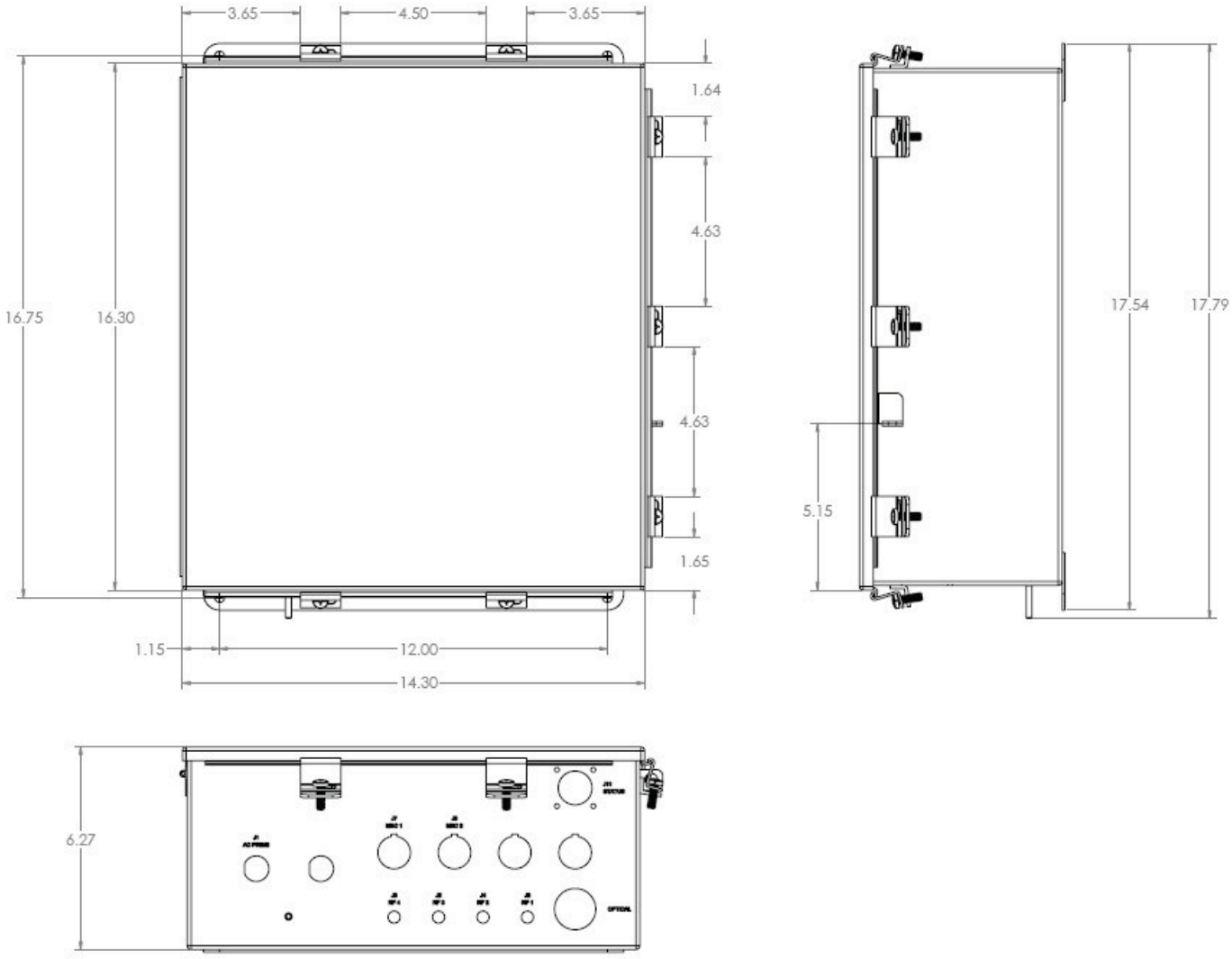
Receiver Model Number	Description
2991R-F7-SA	Rx, 75W Type "F", Rx mounting plate, coaxial cable, lightning protector and dc harness

Additional Parts	Description
3091PS-24	+24 VDC Power Supply, Mounting Bracket, AC Harness, DC Harness, Thermal Pad

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Device Resistance and Voltage for Rx Optical Power and DC Electrical Power Monitor Outputs



Regulatory: At the time of this datasheet revision date Dec.27 2007, the 3091 has not been confirmed to be compliant with CE nor RoHS.

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2991T

L-band Transmitter for use in 3091A ODU

Controls and Monitor (J1)

Pin	Function
1	+24 VDC
2	RF Level
3	Ground

LED

LNB Power +13 VDC / +17 VDC

Switches

LNB Power

2991T RF Specification

Parameter	Condition	Min	Max	Unit
Bandwidth		950	2500	MHz
Amplitude Flatness	Any 48 MHz Entire Band	- -	0.5 2.0	dB p-p dB p-p
Input Return Loss	900 - 2500 MHz	-	-10	dB
Tramitter Gain (TG) 2991TS-B5 2991TS-F7 2991TL-B5 2991-TL-F7	 Std gain, 50 ohm Stg gain, 75 ohm Low gain, 50 ohm Low gain, 75 ohm	 -10.5 -10.5 -2.5 -2.5	 - - - -	 dB.W/A dB.W/A dB.W/A dB.W/A
Tx C/N	SL = +1 dBm, 2Ghz	-	110	dBc/Hz
Noise Figure Standard Gain Low Gain	 0 dB loss	 - -	 20 31	 dB dB
Tx TOI	2-tones, SL=-25 dBm each 1001 & 1002 MHz	-50	-	dBc
Spurious	SL = +1 dBm, 1.0 GHz	-	-80	dBc

2991R

L-band Receiver for use in 3091A ODU

Controls and Monitor (J1)

Pin	Function
1	+24 VDC
2	Optical Level
3	Graound

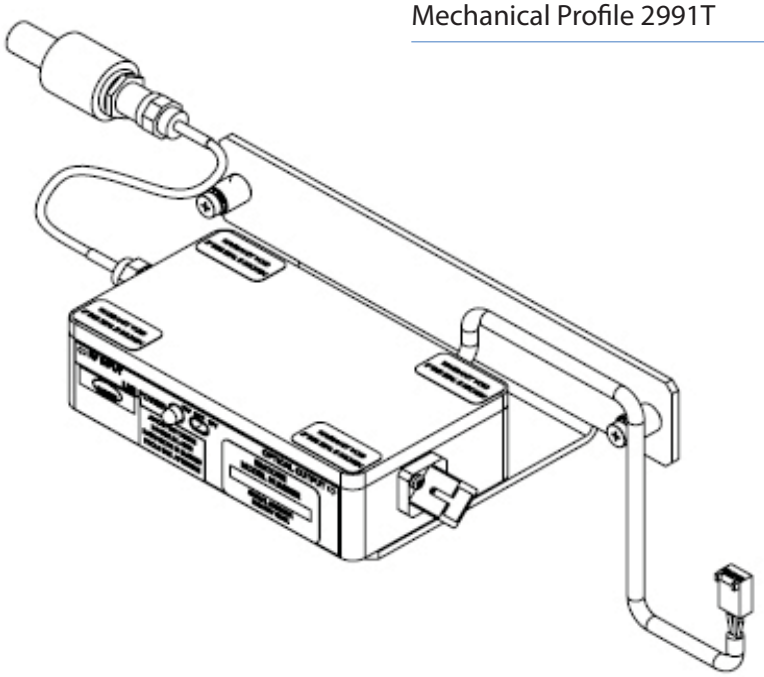
2991R RF Specification

Parameter	Condition	Min	Max	Unit
Bandwidth		950	2500	MHz
Amplitude Flatness	Any 48 MHz Entire Band	--	0.5 3.0	dB p-p dB p-p
Output Return Loss	900 - 2500 MHz	-	-15	dB
Receiver Gain (RG) 2991R-B5 2991R-F7	 50 ohm 75 ohm	 23.0 23.0	 - -	 dB.A/W dB.A/W

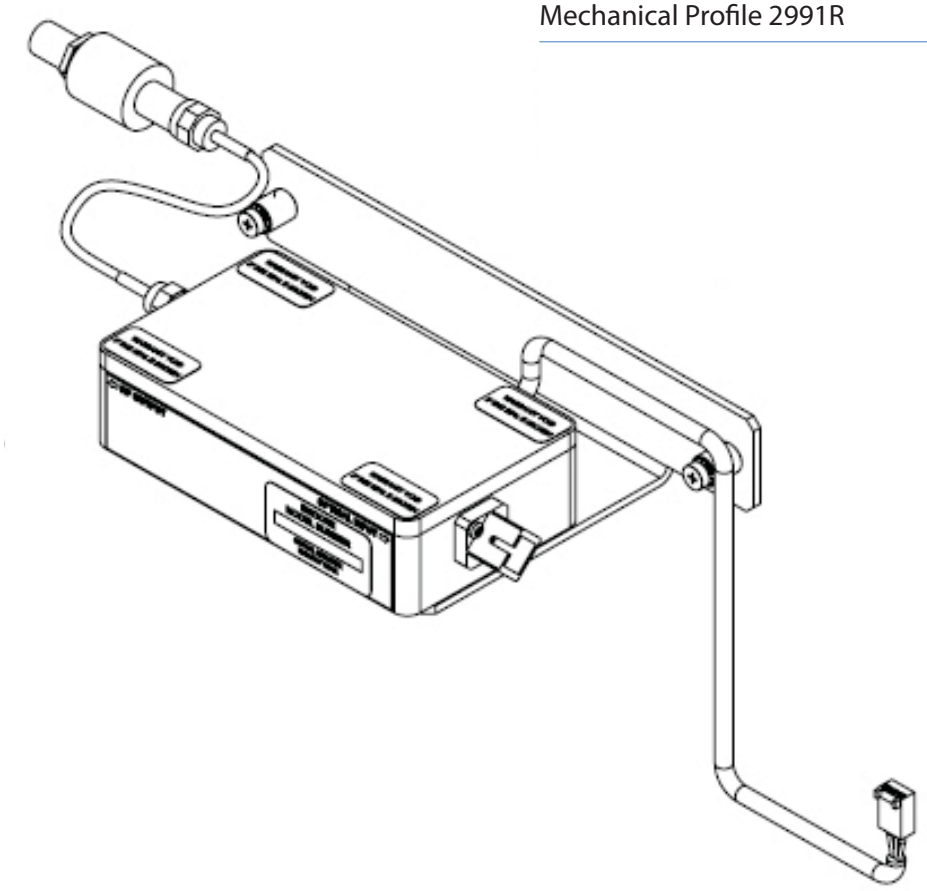
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Mechanical Profile 2991T



Mechanical Profile 2991R



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