

## Optical Node

Refs. 231080, 231081, 231280, 231281

### Important Safety Instructions

#### General installation conditions

- Before handling or connecting the equipment, please read this manual.
- Do not obstruct the equipment's ventilation system.
- Please allow air circulation around the equipment.
- Do not place the equipment near sources of heat or in excessively moisture conditions.
- Do not place the equipment where it may be affected by strong vibrations or knocks.

#### How to use the equipment safely

- If any liquid or object falls inside the equipment, please contact a specialized technician.
- Do not connect the equipment until all the other connections have been made.

#### Instructions for optical connection

- For the optical connection, a single mode fibre cable is used with an SC/APC-type connector.
- Remove the dust cap from the optical connector located inside the equipment, as well as the one of the connector of the single mode fiber to be connected to the equipment.
- Connect the cable to the device, carefully slotting the guides together for both connectors, pushing the connector all the way in.

#### Precautionary measures with the connection point

- Take special care to avoid damaging the unprotected ends of the connectors, as small scratches, impurities and/or particles of dirt, oil, grease, sweat etc. may significantly affect the quality of the signal.
- To clean the ends of the connectors, wipe with an appropriate cleaning wipe moistened with isopropyl alcohol, specific for the cleaning of optical elements. Make sure the alcohol evaporates fully before connecting.
- Keep the connector covers and cable caps in a safe place in case they are needed in the future.
- Always fit the covers on the connectors of devices that are not connected to cables to prevent the laser beam from damaging the eyes.
- Avoid turning on the transmitter without having the fibre optic cable connected.

#### Safety Precautions

##### Warning-

This product emits an invisible laser beam. Avoid contact with laser radiation. The use of equipment such as binoculars or magnifying glasses may increase damage caused to the eyes.



According to EN60825-1\_ 2007



##### Precaution

- The use of controls or adjustments, or procedures other than those specified in this manual may result in exposure of body parts to harmful radiation.
- Carefully read and observe the instructions given in this manual, and keep it for future reference.
- Do not use the equipment in any way that does not comply with the operating instructions or in any conditions that exceed the stipulated atmospheric specifications.
- This equipment is not user-serviceable. Should you require assistance, contact our technical service department.
- Never point the laser beam intentionally at people or animals.



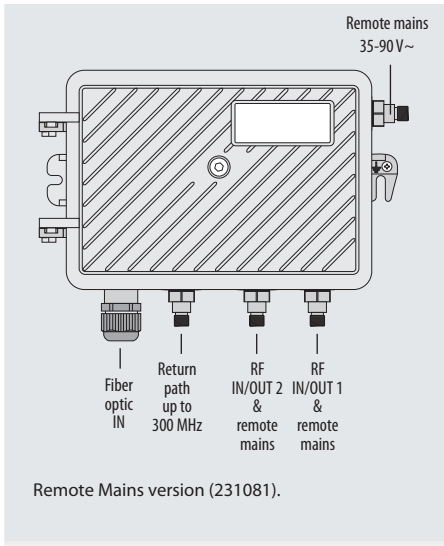
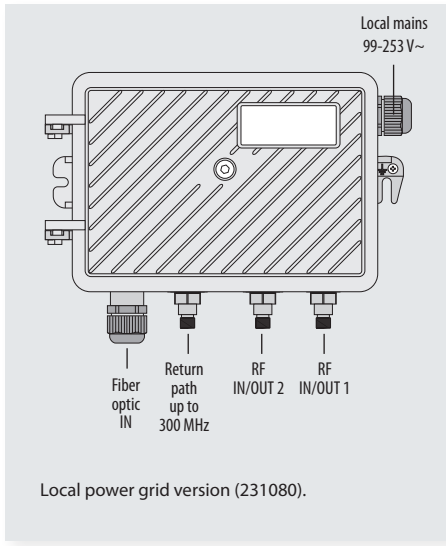
Technical specifications		231080	231081	231280	231281
<b>Forward path</b>					
Frequency range	MHz	54 to 1006			
Output impedance	Ohm	75			
Optical input level for OLC	dBm	-8 to +1dBm			
Flatness	dB	± 0.75			
Number of outputs <sup>(1)</sup> (internally selectable)	no.	1 or 2			
Typical output level in OLC range, port 1 <sup>(2)</sup>	dBmV	53			
CNR <sup>(2)</sup>	dB	>52			
CSO <sup>(3)</sup>	dB	>60			
CTB <sup>(3)</sup>	dB	>60			
Input attenuator	dB	4, 6 selectable			
Inter stage attenuator	dB	1, 2, 3, 4, 5, 6, 7, 8 selectable			
Output level slope	dB	4, 9 selectable			
Wavelength	nm	1200 ... 1600			
Optical return loss	dB	>40			
Optical connector	type	SC/APC			
Max optical input power before damage	dBm	6			
Optical device	type	InGaAs pin photodiode			
<b>Return path</b>					
Frequency range (selectable)	MHz	5 to 42	5 to 300		
Input impedance	Ohm	75			
Optical output level	dBm	3			
Flatness	dB	± 0.75			
RF input level	dBmV	15 to 30			
RF input level control	dB	0 ... -10 (step 2dB), -14, -18			
Wavelength	nm	1310 ±20			
Optical connector	type	SC/APC			
Laser type	type	DFB (Class1M)			
<b>General</b>					
Local Mains voltage	V~	99 ... 253	--	99 ... 253	--
Remote Mains voltage	V~	--	35 ... 90	--	35 ... 90
Mains frequency range	Hz	50 - 60			
Max. power consumption with local or remote mains	W	16.5			
Max. current consumption with local mains	mA	300	--	300	--
Max. current consumption with remote mains	mA	--	750	--	750
Remote feed current on the outputs (internally select.)	A	--	<7	--	<7
Remote feed current feed-in (power passing)	A	--	<10	--	<10
Local mains cord	type	PG-7	--	PG-7	--
Remote mains	type	--	5/8 entry fitting	--	5/8 entry fitting
Test point, incide	dB	-30			
RF connectors	type	5/8 entry fitting with F adapter			
Optical fiber input	type	PG-13,5			
Housing material		Aluminium			
Operating temperature	°F	14 ... 131			
Dimensions	in	9.13 x 3.54 x 5.51			
Weight	lb	4.02			
Index operation	IP	61			
EMC compatibility		EN 50083-2			
Safety		EN 60825-1_2007			

(1) With internal splitter 50/50.

(2) Measure made with a transmitter 2333. The RF input level into the transmitter was 26dBmV. 42 ch CENELEC.

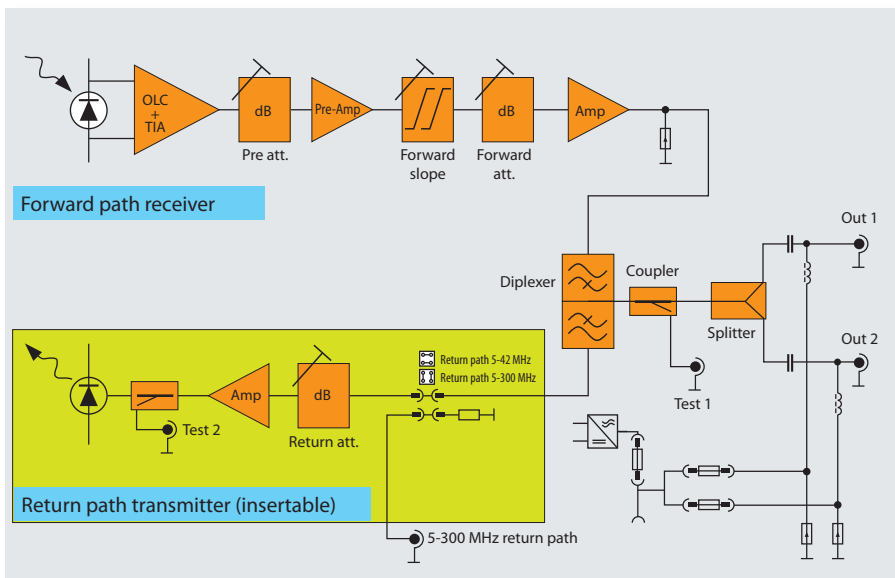
(3) Distortion products for CENELEC 42 Ch. Output level 51dBmV flat.

**Power modes**

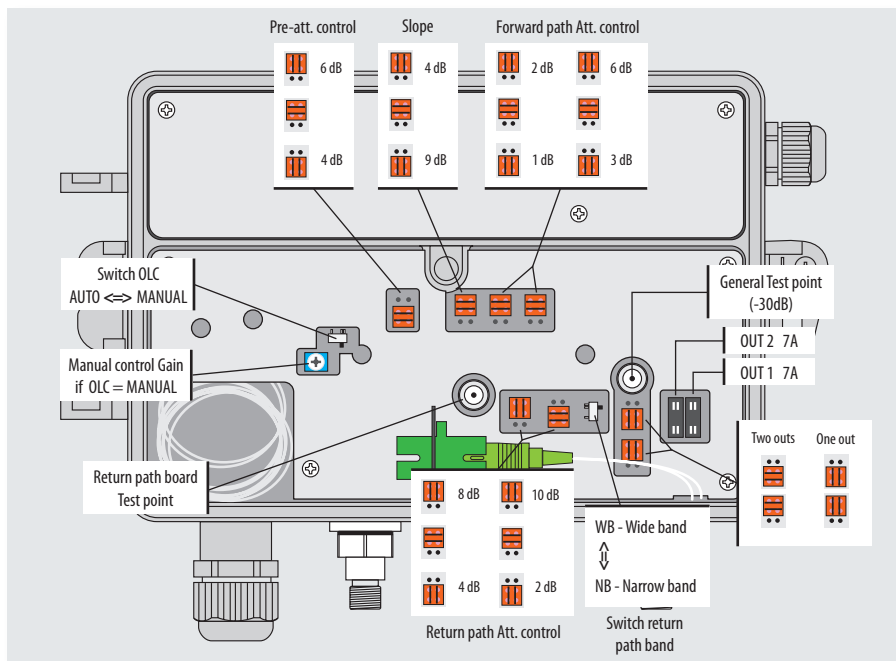


All "F" connectors are interchangeable by adapters, reference 4121, for half inch cable.

**Block diagram**



## Controls description



## Setting the return path

Select the return path band (WB up to 300MHz or NB up to 42MHz).

**Narrow band (NB):** Select the best combination of attenuators up to measure 16-17 dBmV per channel in the return path test point. This

measure was done with 6 channels.

**Wide band (WB):** Select the best combination of attenuators up to measure 10-12dBmV per channel in the return path test point. This measure was done with 28 channels.

## Setting mains passage

For reference 231081 and 231281, you can select the passage of power from remote mains input

to RF outputs by the insertion of the supplied fuses.

## Guarantee

Televés S.A. offers a two year guarantee, beginning from the date of purchase for countries in the EU. For countries that are not part of the EU, the legal guarantee that is in force at the time of purchase is applied. Keep the purchase invoice to determine this date.

During the guarantee period, Televés S.A. complies with the guarantee by repairing or substituting the faulty equipment.

The harm produced by improper usage, wear and tear, manipulation by a third party, catastrophes or any other cause beyond the control of Televés S.A. is not included in the guarantee.



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