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NEC NS Series

NS Branching Unit

Technical Description

Document Center
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1 General

The Branching Unit (BU) is introduced in the optical fiber submarine cable system. It is laid underwater to branch out fiber transmission paths and Power-feeding paths to landing stations. The BU provides better economical solutions as well as good flexibility in networking with its multi-landing capability.

Basic functions of the BU are:

(1) Branching a fiber transmission path.

Mechanical Construction is shown in Figure 1-1.

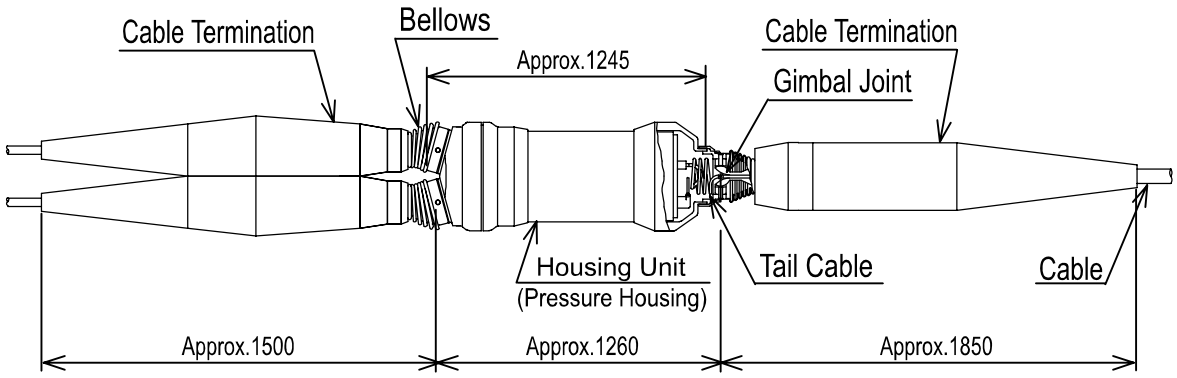
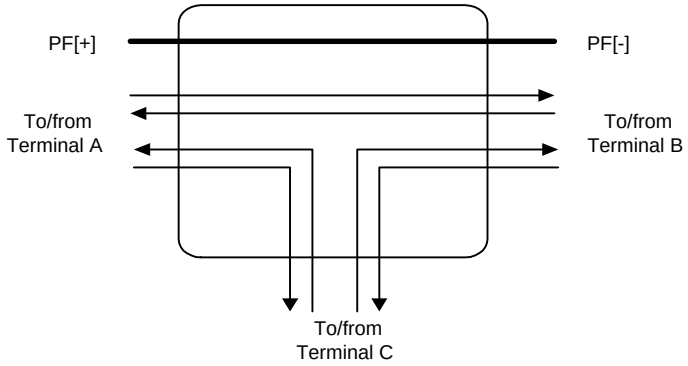


Figure 1-1 Mechanical Construction of BU

2 BU Design

2.1 Power Feeding and Optical Path Arrangement

Power Feeding and Optical path of Branching Unit is Shown in Figure 2-1.



Note
It is able to accommodate up to 2 fiber pairs related with the cable composition.

Figure 2-1 Power Feeding and Optical Path of BU

2.2 Mechanical Construction

The Branching Unit basically utilizes the mechanical design which is similar to the Optical Repeater. The Branching Unit consists of housing unit and inner unit.

Figure 2-2 shows the cross section of housing including inner unit.

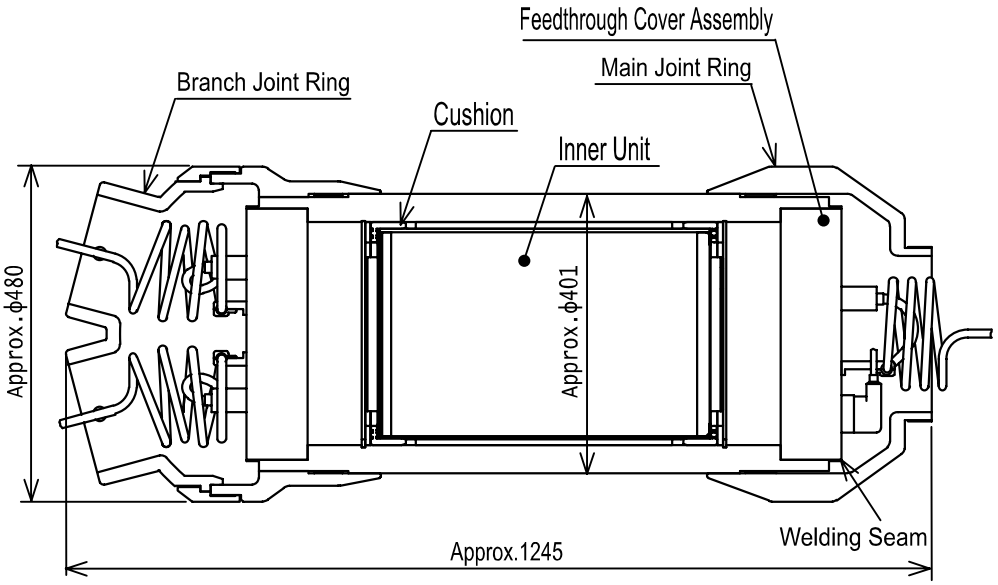


Figure 2-2 The Cross section of BU

3 Technical Information

3.1 Physical Data

a) Housing

- Dimension

Maximum Outer Diameter	Approx. 480 mmϕ
Length (Pressure Housing)	Approx. 1.4 meters

- Weight

Excluding Cable Termination	Approx. 1000 kg
- Water Pressure Strength	> 78.4Mpa (800 kgf/cm^2)
- Torsion Strength	> 1.47KN-m (150 kg-m)
- Tensile Strength	> 980KN (100 tons)
- Withstand Vibration Strength	1.5 mm $_{P-P}$, 5-55Hz
- Material	Beryllium-copper alloy

(b) Inner Unit

- Diameter	Approx. 300 mmϕ
- Length	Approx. 480 mm
- Shock Strength	Max. 30 G

3.2 Electrical Data

- Optical Transmission Loss	<1.5 dB
- DC-Voltage Drop	< 2 V (Passive Type)
- Insulation Resistance	> 2000 MΩ
- High Voltage Withstand (Peak Voltage)	≥ 12 kV
- Insertion Loss of Low Frequency	Approx. 0 dB

Note: Low frequency current is supplied with current drive mode under the DC bias current.

3.3 Environmental Condition

Temperature

- Operation	0 °C to +35 °C
- Storage	-10 °C to +45 °C

3.4 Reliability

Fit of BU	< 1 fits (Related to the BU design)

Note: This document describes the current version of NEC standard equipment. If there is any conflict between this document and the system description and/or the compliance statement, the latter will supersede this document. The specifications or configuration contained in this document are subject to change without notice due to NEC's continuing design improvement.