

**EN**

# 3DS Installation Guide

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# 1. OVERALL

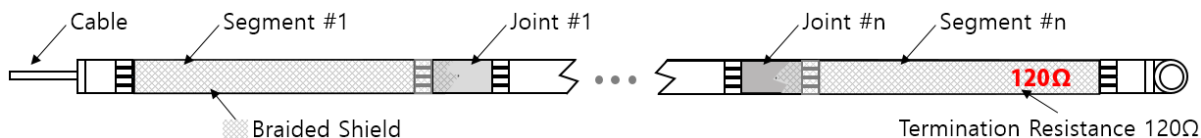
3DS is designed for long-term measurement of structures and the ground by geotechnical engineering side. Before install 3DS system, be well-acquainted with this installation guide and the instruction manuals for the system.

Long-term measurement is essential thing in automation but it is also very difficult thing. 3DS provides reliable and easy measurement for your engineering services.

## RELATED DOCUMENTS

- ✓ *Technical Data Sheet for 3DS*
- ✓ *Quick Guidance for 3DS-Converter*
- ✓ *Instruction Manual for DAS CAN Data Logger (DCL-CAN)*
- ✓ *Instruction Manual for DAS DAQ Software (DPROWin-DAQ for Windows OS)*

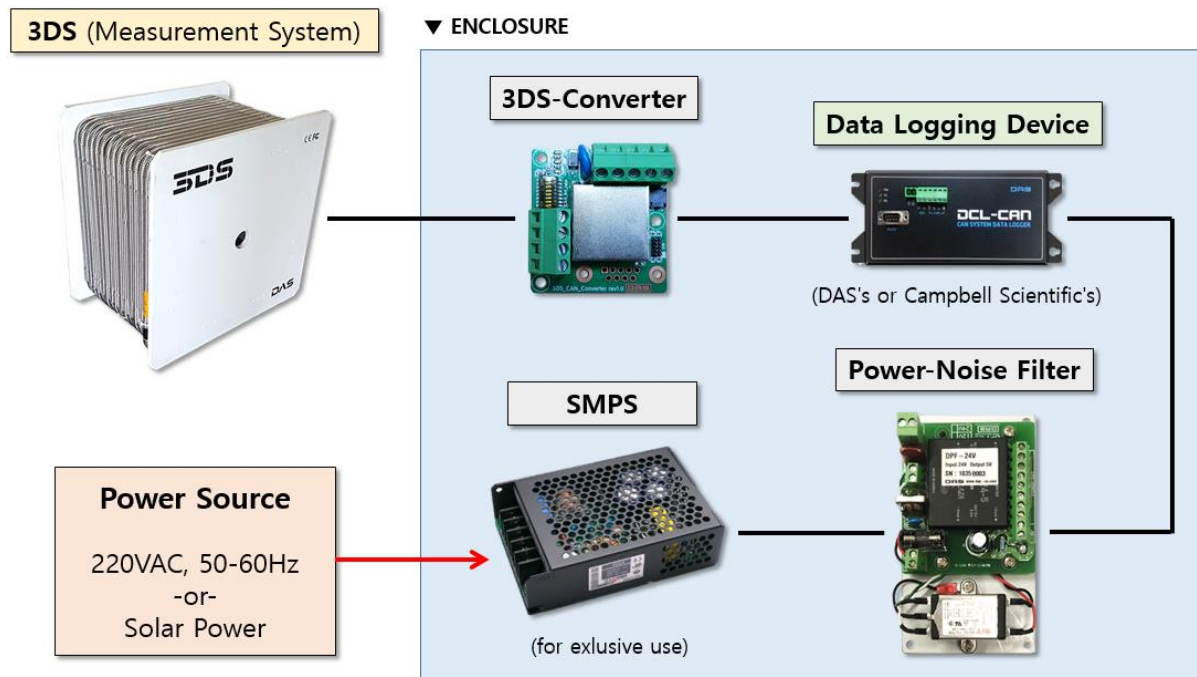
# 2. STRUCTURES



3DS consists of SEGMENTS and JOINTS. Stainless steel braided shields covered outside.

Segment length can be from 300 millimeters upto 1,000 millimeters. If over 1,000 millimeters length segment necessary, contact the seller or the manufacturer.

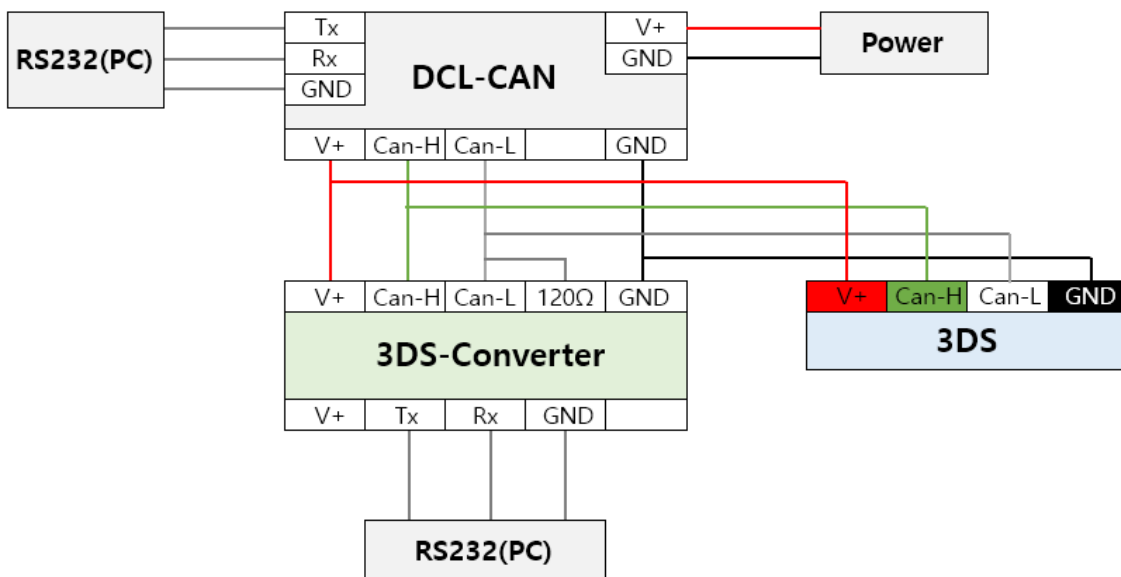
# 3. SYSTEM COMPONENTS



SMPS will be changed to a mobile power pack and solar panels if solar powered necessary.

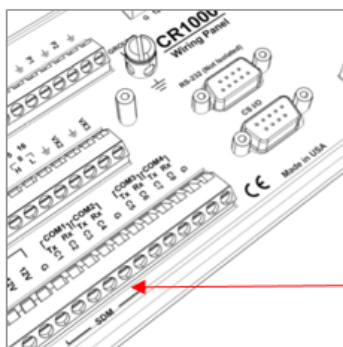
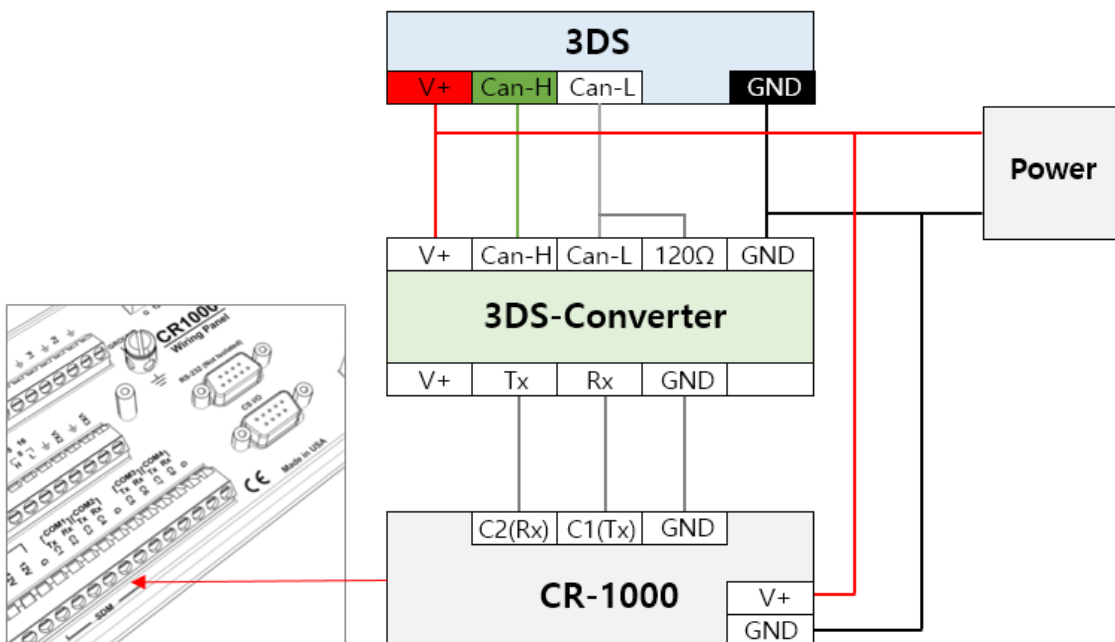
## 4. CONNECTIONS

3DS has a CANbus. Means, all of CAN sensors (segments) can be connected in parallel.



And 3DS-Converter has the terminal for a terminating resistance. (In this case terminating resistance is 120 ohms) If necessary, short the terminal of 120 ohms and the terminal of CAN-L on the 3DS-Converter.

3DS can be also used with Campbell Scientific's such as CR1000 data logger. For this, changing some settings on the 3DS-Converter is necessary.

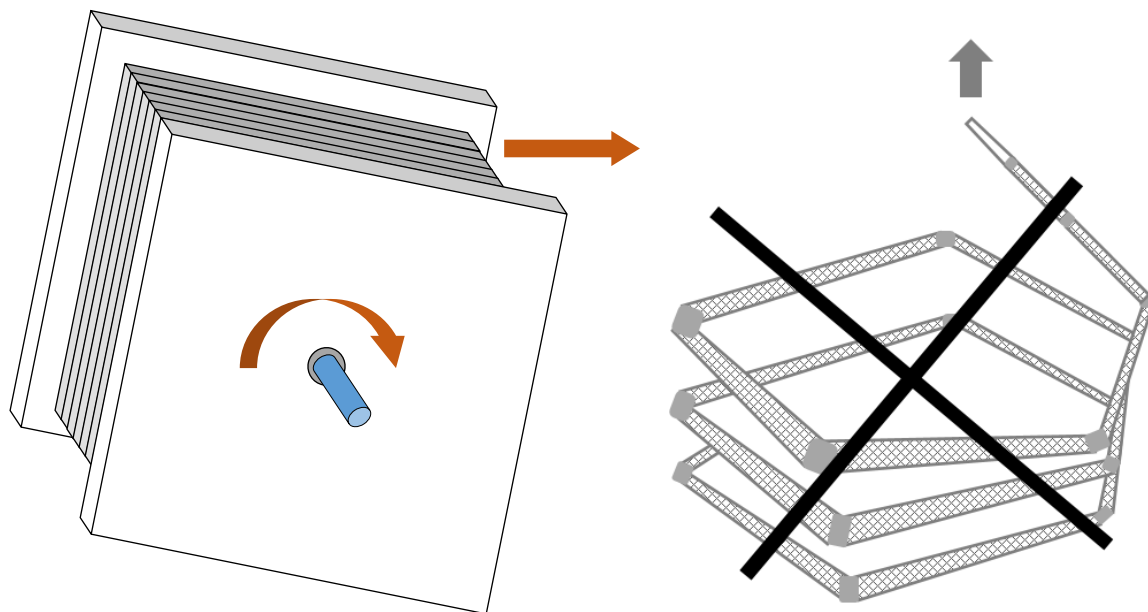


## **5. INSTALLATIONS**

### **5.1 Unwind Segments**

3DS is wound on a reel when it released. To unwind, rotate the reel and unwind in order.

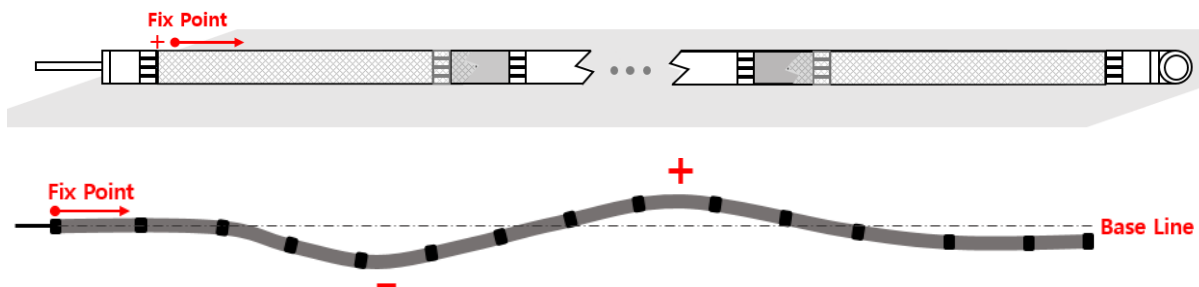
Beware not to make joints twisted when lift up or unwind. If joints twisted, alignments of inclinometers will be broken. That may cause serious disrupting of array-inclinometer performance.



## 5.2 Install Directions

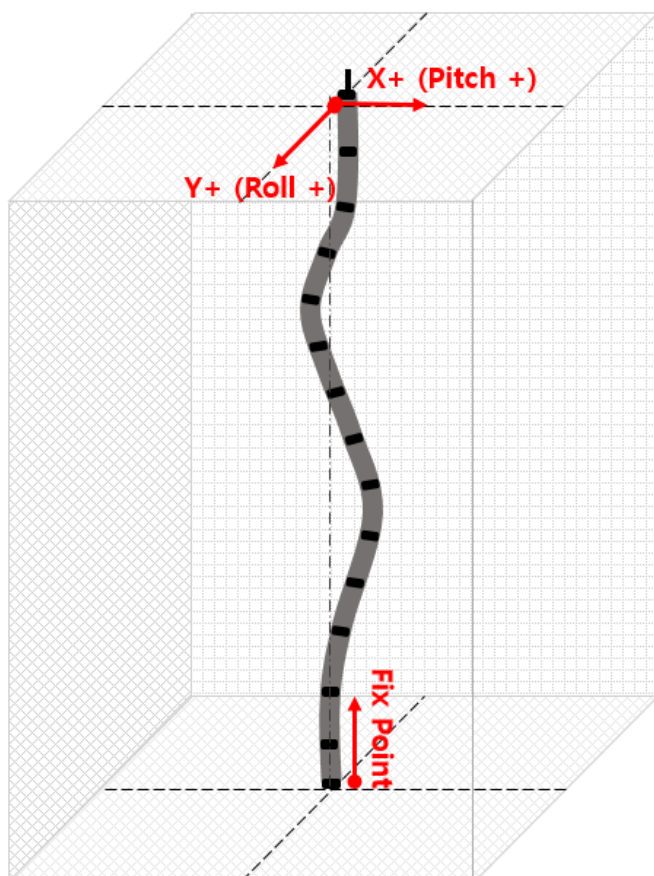
### 5.2.1 Horizontal

For horizontal array, the standard point for positive direction must be toward upper direction. The first segment will be as fixed point.



### 5.2.2 Vertical

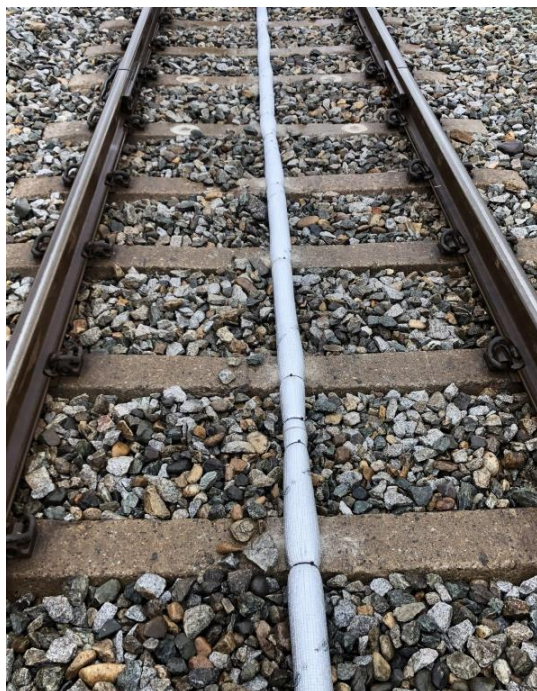
For vertical array, the fixed point is lowest one. the standard point (as an arrow mark) is X+ (pitch+) direction and its orthogonal direction is Y+ (roll+) direction.





### 5.3.2 Install on Sleepers

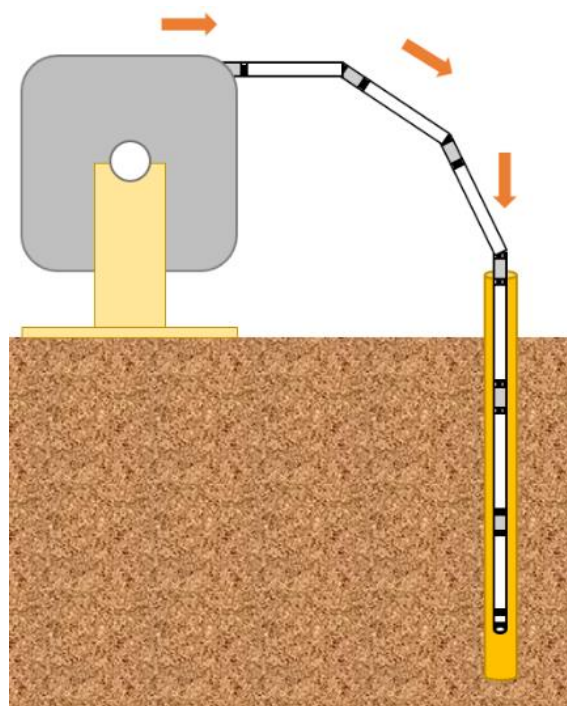
To fix on railroad sleepers, (if available) use clamps shaped ohm-mark with anchor bolts.



### 5.4 Laying Installations

For vertical installation, use saddles or other mounting brackets in case of general structures and in case of laying under the ground, lay PVC pipes or inclinometer casings first and put 3DS into it.

Pipes recommended around 25 to 30 millimeters of its bore. In this case, qualities of boring and grouting are very important.





## **6. MEASUREMENT**

For measurement with data logger, refer instruction manuals for DCL-CAN, DPROWin-DAQ and 3DS-Converter.

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