[0053] FIG. **9** is a perspective view illustrating a state where the juncture plug **25** is loaded to the SPD side jack **10** in FIG. **2**. FIG. **10**A is a plan view of the SPD side jack **10** in FIG. **2**. FIG. **10**B is a plan view illustrating a juncture state between the SPD side jack **10** and the power supply unit side jack **60** in FIG. **2**. FIG. **10**C is a plan view illustrating a state where the three juncture plugs **25** (that is, juncture plugs **25-1**, **25-2** and **25-3**) are loaded to the two jacks **10** and **60** in FIG. **10**B. Further, FIG. **11** is a perspective view of a bottom face side of FIG. **9**.

[0054] In the case **11** of the SPD side jack **10**, on an inner side face of the first erected part and the second erected part which face each other, to guide insertion and detachment of the SPD side plug **30**, guide convex parts **11***d* and **11***e* extending in a longitudinal direction are provided so as to project.

[0055] As illustrated in FIG. **9** and FIG. **10**A, when the SPD side jack **10** is not connected, the two juncture terminals **15-1** and **15-2** of the SPD side jack **10** are connected to each other using the juncture plug **25**. As illustrated in FIG. **10**B and FIG. **10**C, when the three SPD side jacks **10** and one power supply unit side jack **60** are connected, the juncture terminal **65-2** on the power supply unit **50** side and the juncture terminal **15-1** on the SPD **1-1** side are connected using the first juncture plug **25-1**, the juncture terminal **15-2** on the SPD **1-1** side and the juncture terminal **15-1** on the SPD **1-2** side are connected using the second juncture plug **25-2**, and the juncture terminal **15-2** on the SPD **1-2** side and the juncture terminal **15-1** on the SPD **1-3** side are connected using the third juncture plug **25-3**.

[0056] FIG. **12** is a schematic exploded perspective view illustrating the SPD side jack **10** in FIG. **9**.

[0057] The SPD side jack **10** has a rectangular plate-like jack substrate **20** and a rectangular plate-like earth fitting **21**. Around both ends on the jack substrate **20**, the external line side terminals **12-1** and **12-2** and the equipment side terminals **13-1** and **13-2** are separately attached, and between the external line side terminals **12-1** and **12-2** and the equipment side terminals **13-1** and **13-2**, a second connection terminal **17** configured with a card edge connector is attached. At both ends of the earth fitting **21**, the two earth terminals **14-1** and **14-2** are separately attached, and the earth fitting **21** is connected to a bottom face side of the jack substrate **20**.

[0058] The juncture terminals **15-1** and **15-2** and the first connection terminal **16** are respectively configured with a jack having a female contact, and attached on a coupling substrate **22**. The coupling substrate **22** is loaded to an inner case **23**. On both side faces of the jack substrate **20** to which the earth fitting **21** is connected, two inner cases **23** and **24** are loaded so as to face each other, and on the bottom face of the earth fitting **21**, the rail stopper **19** is slidably attached through the coil spring **19***b*. The jack substrate **20** and the earth fitting **21** on which these inner cases **23** and **24** and the rail stopper **19** are attached are fixed by being inserted from the bottom face side of the external case **11**, so that the SPD side jack **10** is assembled. The juncture plug **25** attached by insertion to the juncture terminals **15-1** and **15-2** has six male contacts **25***a*.

[0059] FIG. **13** is a left side view of the SPD side plug **30** in FIG. **2**.

[0060] In the case **31** of the SPD side plug **30**, at a central upper part on the left side face, a substantially rectangular concave part **31***a* for tab is formed. At a lower and right part of the concave part **31***a* for tab, a guide concave part **31***c* extending in a longitudinal direction for accepting and guiding the guide convex part **11***d* of the SPD side jack **10** is formed. At a lower part on the left side face of the case **31**, juncture plug storage space **31***f* having a substantially square cross section is formed.

[0061] Meanwhile, in the case **31** of the SPD side plug **30** illustrated in FIG. **2**, at a central upper part on the right side face, a substantially rectangular concave part **31***b* for tab is formed. From a lower central part to a lower part of the concave part **31***b* for tab, a guide concave part **31***d* extending in a longitudinal direction for accepting and guiding the guide convex part **11***e* of the SPD side jack **10** is formed. Around the guide concave part **31***d*, a U-shaped cutout groove **31***e* for providing elasticity to this surrounding area is formed.

[0062] FIG. **14** is a bottom view of the SPD side plug **30** in FIG. **2**.

[0063] On a bottom face of the case **31** of the SPD side plug **30**, at an inner side of an outer edge, a storage concave part **31***g* is formed. At an inner side of the storage concave part **31***g*, a third connection terminal **32** formed with three juncture pins is provided so as to project closer to the juncture plug storage space **31***f*. In a direction orthogonal to the third connection terminal **32**, a fourth connection terminal **33** formed with a plate-like card edge terminal for being inserted into the second connection terminal **17** of the SPD side jack **10** is provided so as to project. Further, in the vicinity of the fourth connection terminal **33**, an erroneous insertion prevention plug **49** for being inserted into the erroneous insertion prevention hole **18** of the SPD side jack **10** is provided so as to project.

[0064] FIG. **15** is a partially cutout perspective view of the SPD side plug **30** in FIG. **2**, and FIG. **16** is a perspective view of an internal structure in which inner parts of the SPD side plug **30** in FIG. **2** are omitted.

[0065] Within the case **31** of the SPD side plug **30**, an inner frame **47** having a substantially L-shaped cross section is stored. At an end portion of an upper part of the inner frame **47**, the switch **46** is attached. In a longitudinal direction of the inner frame **47**, a plug substrate **48** for wiring is fixed using a screw. At an upper part of the plug substrate **48**, the switch **46**, and the four LEDs **45***a*, **45***b*, **45***c* and **45***d* configuring the display unit **45** are provided. At an upper part of the plug substrate **48**, a degradation detecting unit **40** is mounted, and, further, below the degradation detecting unit **40**, a protection circuit **34** is mounted.

[0066] The protection circuit **34** is a circuit which discharges lightning surge intruding from the external line side terminals **12-1** and **12-2** of the SPD side jack **10** or the equipment side terminals **13-1** and **13-2** through the second connection terminal **17** and the fourth connection terminal **33** of the SPD side plug **30** to the earth terminal **14-2** side to protect the equipment to be protected. Further, the degradation detecting unit **40** detects intrusion of the lightning surge and detects a degradation state of the protection circuit **34** by comparing a history of the lightning surge (such as, for example, a degree of the lightning surge and the number of times of intrusion of the lightning surge) with a reference value.

[0067] At a lower part of the plug substrate **48**, the third connection terminal **32** and the fourth connection terminal **33** are connected while piercing through a bottom of the inner frame **47**. At the bottom of the inner frame **47**, juncture plug storage space **31***f* and a storage concave part **31***g* are