5 BTS3012 Cables

About This Chapter

This part describes the functions, structure, pins, and installation positions of BTS3012 cables.

5.1 List of the BTS3012 Cables
The BTS3012 cables include power cables, PGND cables, transmission cables, signal cables, and RF signal cables.

5.2 Power Cables and PGND Cables of the BTS3012
The power cables of the BTS3012 include external power input cable, power cable from the DC lightning arrester to the power input terminal socket, power cable from the cabinet top to the Busbar, power cable between the Busbar and the DAFU subrack, power cable between the Busbar and the DTRU subrack, power cable between the Busbar and the FAN subrack, and power cable between the Busbar and the common subrack. The PGND cables include the PGND cable for the external power supply and the PGND cable for the protection bar, to which the DC lightning arrester is connected.

5.3 Power Cables on the BTS3012 Busbar
The power cables on the BTS3012 Busbar are used to lead the external power cables to the subracks in the BTS3012 cabinet.

5.4 Transmission Cables of the BTS3012
The transmission cables of the BTS3012 consist of E1 cables, E1 signal transfer cables, optical cables, and Ethernet cables.

5.5 Signal Cables of the BTS3012
The signal cables of the BTS3012 are used to transmit the following signals: lightning protection failure alarm signals on the cabinet top, lightning protection failure alarm signals for combined cabinets, power detection signals, signals for short-circuiting the combiner, signals for combined cabinets, signals for cabinet groups, signals for Boolean value outputs, signals for Boolean value inputs, dedicated monitor signals, signals from the environment monitoring device, signals for controlling the RET antenna, signals between the DCTB and the DAFU subrack, signals between the DCCU/DCSU and the DCTB TOP, signals between the DCSU and the DTRB, Boolean value transfer signals, and FAN subrack signals.

5.6 RF Cables of the BTS3012
The RF cables of the BTS3012 include BTS3012 RF signal cable and BTS3012 indoor 1/2-inch RF jumper.

5.7 Signal Cable Between the BTS3012 and the Auxiliary Equipment

5.1 List of the BTS3012 Cables

The BTS3012 cables include power cables, PGND cables, transmission cables, signal cables, and RF signal cables.

Table 5-1 lists the BTS3012 cables.

Table 5-1 List of the BTS3012 Cables

Item	Sub-Item	Installation Positions	Initial Setting
DC power cable	**External power input cable**	One end connects to the –48 V and GND terminals on the power input terminal socket on the cabinet top. The other end connects to the power distribution device provided by the operator.	Both ends of the cable should be made on site. For details, refer to **Installing the BTS3012 Power Cables**.
	Power cable from the DC lightning arrester to the power input terminal socket	One end connects to the –48 V and GND terminals on the power input terminal socket on the cabinet top. The other end connects to the V– and V+ terminals of the DC lightning arrester on the cabinet top.	Both ends of the cable are connected before delivery.
	Power cable from the cabinet top to the Busbar	One end connects to the –48 V and GND terminals on the power input terminal socket on the cabinet top. The other end connects to the –48 V and BGND terminals of the power input terminal socket on the busbar on the upper right part of the cabinet.	Both ends of the cable are connected before delivery.
PGND cable	**External PGND cable**	One end connects to the PGND bar provided by the operator. The other end connects to the PGND bar on the cabinet top.	Both ends of the cable should be made on site. For details, refer to **Installing the BTS3012 PGND Cables**.

Item	Sub-Item	Installation Positions	Initial Setting
	PGND cable between the DC lightning arrester and the PGND bar	One end connects to the PGND bar on the cabinet top. The other end connects to the GND terminal of the DC lightning arrester on the cabinet top.	
Equipotential cable	**Equipotential cable**	One end connects to the PGND bar on the top of one cabinet. The other end connects to the PGND bar on the top of another cabinet.	Both ends of the cable should be made on site. For details, refer to **Installing the BTS3012 Equipotential Cables**.
Busbar power cable	**Power cable between the Busbar and the DAFU subrack**	One end connects to the port on the first Busbar on the right of the cabinet. The other end connects to the PWR ports on the DDPUs or the DC-IN-48V ports on the DFCUs.	One end of the cable is connected with the Busbar before delivery. The other end of the cable should be made on site. For details, refer to **Installing the Power Cables from the BTS3012 Busbar to the DAFU Subrack**.
	Power cable between the Busbar and the DTRU	One end connects to the port on the first Busbar on the right of the cabinet. The other end connects to the PWR port on the DTRU.	One end of the cable is connected with the Busbar before delivery. The other end of the cable should be made on site. For details, refer to **Installing the Power Cables from the BTS3012 Busbar to the Common Subrack and DTRU Subrack**.
	Power cable between the Busbar and the FAN subrack	One end connects to the port on the eighth Busbar on the right of the cabinet. The other end connects to the PWR port on the FAN subrack.	One end of the cable is connected with the Busbar before delivery. The other end of the cable should be made on site. For details, refer to **Installing the Power Cables from the BTS3012 Busbar to the Fan Subrack**.

Item	Sub-Item	Installation Positions	Initial Setting
	Power cable between the Busbar and the common subrack	One end connects to the port on the ninth Busbar on the right of the cabinet. The other end connects to the POWER port on the DCCU.	One end of the cable is connected with the Busbar before delivery. The other end of the cable should be made on site. For details, refer to **Installing the Power Cables from the BTS3012 Busbar to the Common Subrack and DTRU Subrack**.
Transmission cables	**75-ohm E1 cable**	One end connects to the transmission device provided by the operator. The other end connects to the TR port on the DELC.	Both ends of the cable should be made on site. For details, refer to **Installing the BTS3012 E1 Cables**.
	120-ohm E1 cable	Tjhe installation of the 120-ohm E1 cable is the same with that of the 75-ohm E1 cable.	
	Ethernet cable	One end of the Ethernet cable connects to the MMI port on the DTMU panel. The other end of the Ethernet cable connects to the HUB. Otherwise, one end connects to the Ethernet port on the LMT PC and the other end connects to a HUB. The crossover cable connects the MMI port on the DTMU panel with the Ethernet port on the LMT PC to set up a communication link between the DTMU and the LMT PC.	The Ethernet cables are connected on site during the maintenance.
	E1 signal transfer cable	One end connects to the TRAN port on the DCCU panel. The other end connects to the DCTB on the cabinet top.	Both ends of the cable are connected before delivery.

Item	Sub-Item	Installation Positions	Initial Setting
	Optical cable	One end connects to the transmission device (such as the ODF) provided by the operator. The other end connects to the optical transmission equipment through the cabling hole on the cabinet top.	Both ends of the cable should be made on site. For details, refer to **Installing the BTS3012 Optical Cables**.
Signal cable	**Lightning protection failure alarm cable**	One end connects to the ALARM port and GND port of the DC lightning protection arrester on the cabinet top. The other end with 2-pin phoenix terminals connects to the S1+S1– or S2+S2– port on the DSAC.	One end of the cable is connected with the DC lightning protection arrester before delivery. The other end of the cable should be made on site. For details, refer to **Installing the Lightning Protection Failure Alarm Cables of the BTS3012**.
	Lightning protection failure alarm cable of the combined cabinets	One end connects to the S2 +S2– port on the DSAC panel of the main cabinet. The other end connects to the S1+S1- port on the DSAC panel of the extension cabinet.	Both ends of the cable should be made on site. For details, refer to **Installing the Lightning Protection Failure Alarm Cables for the Combined Cabinets**.
	Power detection cable	One end connects to the PF out/PR out port on the DFCU panel. The other end connects to the PF in/PR in port on the DFCU panel.	Both ends of the cable are connected before delivery.
	Cable for the combiner on the DTRU	One end connects to the COM port on the DFCU panel. The other end connects to the TX-DUP port on the DFCU panel.	Both ends of the cable are connected before delivery.
	Diversity receive short-circuiting cable	One end connects to the RXD-OUT port on the DFCU panel. The other end connects to the HL-IN port on the DFCU panel.	Both ends of the cable are connected before delivery.

Item	Sub-Item	Installation Positions	Initial Setting
	Cable for the combiner on the DTRU	One end connects to the TX1 or TX2 port on the DTRU. The other end connects to the IN1 or IN2 port on the DTRU.	Both ends of the cable should be made on site. For details, refer to **Installing the Combining Short-Circuiting Signal Cables of the BTS3012/ BTS3012AE**.
	Signal cable between combined cabinets	One end connects to the DCF port on the BTS3012 cabinet top. The other end connects to the port for the combined cabinet on the other cabinet.	Both ends of the cable should be made on site. For details, refer to **Installing the Signal Cables for Combined Cabinets**.
	Signal cable between cabinet groups	One end connects to the CKB1 port or CKB2 port on the BTS3012 cabinet top. The other end connects to the cabinet group port on the other cabinets.	Both ends of the cable should be made on site. For details, refer to **Installing the Signal Cables for Cabinet Groups**.
	Combined-group cable	One end connects to the CKB1 port or CKB2 port on the BTS3012 cabinet top. The other end connects to the CKB1 port or CKB2 port on the top of the BTS312 cabinet.	Both ends of the cable should be made on site. For details, refer to **Installing the Signal Cables for the Hybrid Group of the BTS3012 and BTS312**.
	Boolean value output cable	One end connects to the external device. The other end connects to the SWOUT port on the DMLC.	Both ends of the cable should be made on site. For details, refer to **Installing the Boolean Output Cables of the BTS3012**.
	EAC signal cable	One end connects to the EAC port on the DSAC on the cabinet top. The other end connects to the external device.	Both ends of the cable should be made on site. For details, refer to **Installing the EAC Signal Cables of the BTS3012**.
	Boolean value input cable	One end connects to the external device. The other end connects to the SWIN port on the DMLC.	Both ends of the cable should be made on site. For details, refer to **Installing the Boolean Input Cables of the BTS3012**.

Item	Sub-Item	Installation Positions	Initial Setting
	Dedicated monitoring signal cable	One end connects to the DDF. The other end connects to the AIN port on the DMLC.	Both ends of the cable should be made on site. For details, refer to **Installing the Dedicated Monitoring Signal Cables of the BTS3012**.
	Signal transfer cable for combined cabinets	One end connects to the TO SLAVE–MASTER (FROM DCSU) port on the DCTB. The other end connects to the CC_IN or CC_OUT port on the DCSU.	Both ends of the cable are connected before delivery.
	Environment monitoring signal cable	One end connects to the environment monitoring device. The other end connects to the COM1 or COM2 port on the DSAC.	Both ends of the cable should be made on site. For details, refer to **Installing the EMI Signal Cables of the BTS3012**.
	RET control signal cable	One end connects to the SMA port on the DATU panel. The other end connects to the SMA port on the Bias Tee.	Both ends of the cable should be made on site. For details, refer to **Installing the RET Control Signal Cables of the BTS3012**.
	Signal cable between the DCTB and the DAFU subrack	One end connects to the DCTB. The three ports at the other end connect to the COM/ ONSHELL/DBUS ports on the DDPU/DCOM/DFCU in the DAFU subrack, respectively.	One end of the cable is connected with the DCTB before delivery. The other end of the cable should be made on site. For details, refer to **Installing the Signal Cables Between the DCTB and the DAFU Subrack for the BTS3012**.
	Signal cable between the DCCU/DCSU and the DCTB	Two ports on one end of the cable connect to the TO_TOP1 of the DCCU and the TOP2 port on the DCSU, respectively. The other end connects to the DCTB on the cabinet top.	Both ends of the cable are connected before delivery.

Item	Sub-Item	Installation Positions	Initial Setting
	Signal cable between the DCSU and the DTRB	One end connects to the TO_DTRB port on the DCSU. The other end connects to the port on the DTRB.	Both ends of the cable are connected before delivery.
	Boolean value signal transfer cable	One end connects to the IN port on the DEMU panel. The other end connects to the DCTB on the cabinet top.	Both ends of the cable are connected before delivery.
	Signal cable between the DFCB and the DFCU	One end connects to the COM1 or COM2 port on the DFCB panel. The other end connects to the COM-IN port on the DFCU panel.	Both ends of the cable should be made on site. For details, refer to **Installing the BTS3012/BTS3012AE Signal Cables Between the DFCB and the DFCU**.
	FAN subrack signal transfer cable	One end connects to the To_FAN port on the DCCU panel. The two ports at the other end connect to the COM port on the FAN subrack and the temperature sensor port at the air inlet at the cabinet bottom.	Both ends of the cable are connected before delivery.
RF signal cable	**RF RX/TX signal cables between the DTRU and the DDPU/DFCU**	The cables include RF TX signal cable and RF RX signal cable. The RF TX signal cable connects to the TX port on the DTRU and the corresponding TX port on the DDPU/DFCU. The RF RX signal cable connects to the RX port on the DTRU and to the corresponding RX port on the DDPU/DFCU.	Both ends of the cable should be made on site. For details, refer to **Installing the BTS3012/BTS3012AE RF Signal Cables**.
	Indoor 1/2-inch jumper	One end connects to the feeder. The other end connects to the ANTA or ANTB port on the DDPU or DFCU.	Both ends of the cable should be made on site. For details, refer to **Installing the Indoor 1/2-Inch Jumpers of the BTS3012**.

NOTE

- There is no need to use the cable for the combiner on the DTRU when the DTRU (type B) is configured. The cable for the combiner on the DTRU is used only when the DTRU (type A) is configured.
- Place the removed dustproof caps under the cabinet for future use.

5.2 Power Cables and PGND Cables of the BTS3012

The power cables of the BTS3012 include external power input cable, power cable from the DC lightning arrester to the power input terminal socket, power cable from the cabinet top to the Busbar, power cable between the Busbar and the DAFU subrack, power cable between the Busbar and the DTRU subrack, power cable between the Busbar and the FAN subrack, and power cable between the Busbar and the common subrack. The PGND cables include the PGND cable for the external power supply and the PGND cable for the protection bar, to which the DC lightning arrester is connected.

5.2.1 Power Cables of the BTS3012
The BTS3012 has three kinds of power cables, that is, external power input cable, power cable from the DC lightning arrester to the power input terminal socket, and power cable from the cabinet top to the Busbar.

5.2.2 PGND Cables of the BTS3012
The PGND cables include the PGND cable for the external power supply and the PGND cable between the DC lightning arrester and the protection bar.

5.2.3 Equipotential Cable of the BTS
The equipotential cable connects the grounding terminals between the cabinets, keeping an equal potential between the cabinets and ensuring the safe operation of the BTSs.

5.2.1 Power Cables of the BTS3012

The BTS3012 has three kinds of power cables, that is, external power input cable, power cable from the DC lightning arrester to the power input terminal socket, and power cable from the cabinet top to the Busbar.

Function

Power cables on the BTS3012 cabinet top are used to lead external power into the cabinet. Three kinds of power cables are as follows:

- External power input cable: transmitting -48 V DC power from the DC power distribution device to the terminal block on the cabinet top
- Power cable from the DC lightning arrester to the power input terminal socket: providing filtering and lightning protection for the external DC power
- Power cable from the cabinet top to the Busbar: leading the power treated through lighting protection to the Busbar inside the cabinet

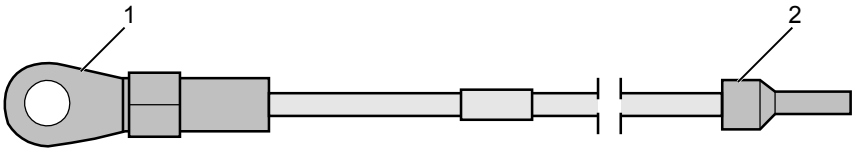
Structure

Each of the three power cables consists of a -48 V power cable and a grounding cable. The blue –48 V DC power cable has a sectional area of 16 ^{2}. The black grounding cable also has a sectional area of 16 mm^2. The grounding cable and –48 V DC power cable has the same structure in appearance.

- One end of the external power cable is an OT terminal and the other end is a core end terminal. The core end terminal and OT terminal are made on site.
- One end of the power cable from the DC lightning arrester to the power input terminal socket is an OT terminal while the other end is a core end terminal. The core end terminal and OT terminal are made on site.
- One end of the power cable from the cabinet top to the Busbar is a DIN connector and the other end is a core end terminal.

Figure 5-1 shows the structure of the external power input cable.

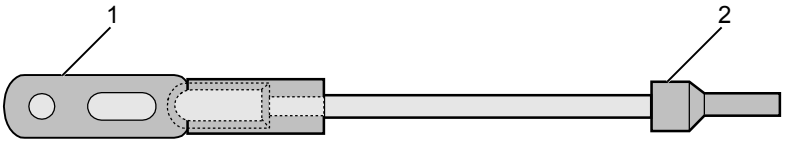
Figure 5-1 Structure of the external power cable



(1) OT terminal (2) Cord end terminal

Figure 5-2 shows the structure of the power cable from the cabinet top to the Busbar.

Figure 5-2 Structure of the power cable from the cabinet top to the Busbar



(1) DIN connector (2) Cord end terminal

Pin Assignment

None.

Installation Positions

Figure 5-3 describes the installation positions of the 48V DC power cable and grounding cable of the three cabinet top cables.

Figure 5-3 Installation positions of the cabinet top cables

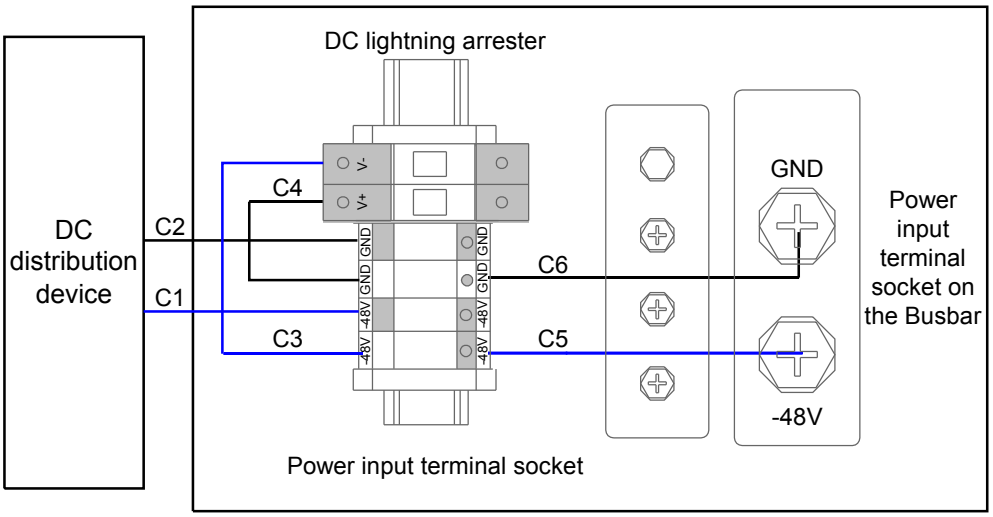


Table 5-2 describes the cables shown in **Figure 5-3**.

Table 5-2 Installation positions of the cabinet top cables

Power Cable Type	Cable No.	Item	One End	Other End
External power input cable	C1	–48 V DC power cable	The OT terminal connects to the relevant wiring post on the power distribution device.	The core end terminal connects to the –48 V terminal of the power input terminal socket on the cabinet top.
	C2	Power grounding cable	The OT terminal connects to the relevant wiring post on the power distribution device.	The core end terminal connects to the GND terminal of the power input terminal socket on the cabinet top.
Power cable from the DC lightning arrester to the power input terminal socket	C3	–48 V DC power cable	The OT terminal connects to the V– terminal on the DC lightning arrester on the cabinet top.	The core end terminal connects to the –48 V terminal of the power input terminal socket on the cabinet top.
	C4	Power grounding cable	The OT terminal connects to the V+ terminal on the DC lightning arrester on the cabinet top.	The core end terminal connects to the GND terminal of the power input terminal socket on the cabinet top.
Power cable from the cabinet top to the Busbar	C5	–48 V DC power cable	The DIN terminal connects to the –48 V terminal of the power input terminal socket on the Busbar.	The core end terminal connects to the –48 V terminal of the power input terminal socket on the cabinet top.

Power Cable Type	Cable No.	Item	One End	Other End
	C6	Power grounding cable	The DIN terminal connects to the BGND terminal of the power input terminal socket on the busbar.	The core end terminal connects to the GND terminal of the power input terminal socket on the cabinet top.

5.2.2 PGND Cables of the BTS3012

The PGND cables include the PGND cable for the external power supply and the PGND cable between the DC lightning arrester and the protection bar.

Function

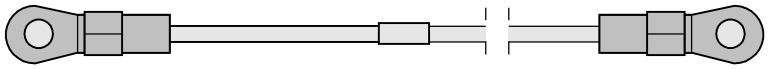
The PGND cables keep the cabinet well grounded. There are two types of PGND cables.

- The external PGND cable guarantees the proper grounding of the entire cabinet.
- The PGND cable between the DC lightning arrester and the grounding bar guarantees the proper grounding of the DC lightning arrester.

Structure

The structure of the two PGND cables is the same. The yellow and green PGND cable has a sectional area of 25 mm^2. Both ends of the cable use OT terminals. For details, refer to **Figure 5-4**.

Figure 5-4 Structure of the PGND cable



Pin Assignment

None.

Installation Positions

Table 5-3 describes the installation positions of the PGND cable.

Table 5-3 Installation positions of the PGND cable

PGND Cable Type	One End (OT Terminal)	Other End (OT Terminal)
External PGND cable	Connecting to the PGND bar on the top of one cabinet	Connecting to the PGND bar in the equipment room
PGND cable between the DC lightning arrester and the PGND bar		Connecting to the GND terminal of the DC lightning arrester on the cabinet top

5.2.3 Equipotential Cable of the BTS

The equipotential cable connects the grounding terminals between the cabinets, keeping an equal potential between the cabinets and ensuring the safe operation of the BTSs.

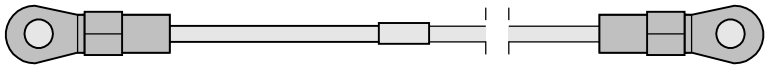
Function

The equipotential cable helps keep an equal potential between the cabinets and ensuring the safe operation of the BTSs.

Structure

The equipotential cable is a green and yellow cable with cross-sectional area of 25 mm^2. Both ends of the cable are OT terminals. See **Figure 5-5** for details.

Figure 5-5 Structure of the equipotential cable



Pin Assignment

None.

Installation Positions

Table 5-4 describes the installation positions of the equipotential cable.

Table 5-4 Installation positions of the equipotential cable

Cabinet Model	One End (OT Terminal)	Other End (OT Terminal)
BTS3012	Connecting to the PGND bar on the top of one cabinet	Connecting to the PGND bar on the top of another cabinet
BTS3012AE	Connecting to the PGND bar at the bottom of one cabinet	Connecting to the PGND bar at the bottom of another cabinet

5.3 Power Cables on the BTS3012 Busbar

The power cables on the BTS3012 Busbar are used to lead the external power cables to the subracks in the BTS3012 cabinet.

5.3.1 Power Cable Between the BTS3012 Busbar and the DAFU Subrack
The power cable between the Busbar to the DAFU subrack leads the power on the Busbar to the DAFU subrack in order to supply power for the DDPUs or DFCUs.

5.3.2 Power Cable Between the BTS3012 Busbar and the DTRU Subrack
The power cable between the Busbar to the DTRU subrack is used to lead the power on the Busbar to the DTRUs in the DTRU subrack.

5.3.3 Power Cable Between the BTS3012 Busbar and the FAN Subrack
The power cable between the Busbar and the FAN subrack is used to lead the power to the FAN subrack and supply power for the FAN Box.

5.3.4 Power Cable Between the BTS3012 Busbar and the Common Subrack
The power cable between the Busbar and the common subrack is used to lead the power to the common subrack and supply power for the common subrack.

5.3.1 Power Cable Between the BTS3012 Busbar and the DAFU Subrack

The power cable between the Busbar to the DAFU subrack leads the power on the Busbar to the DAFU subrack in order to supply power for the DDPUs or DFCUs.

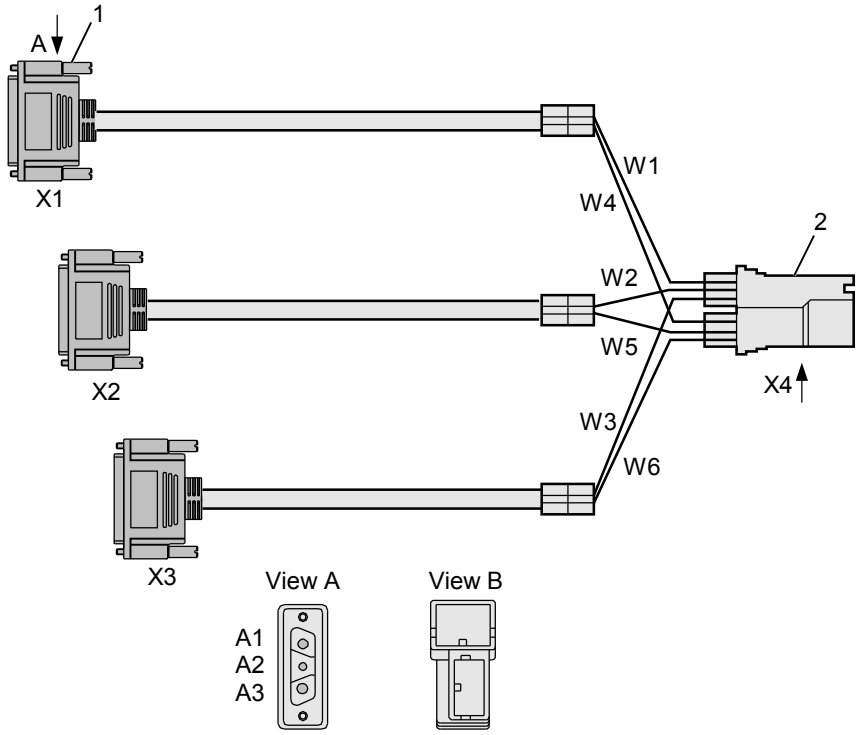
Function

The power cable between the Busbar to the DAFU subrack leads the power on the Busbar to the DAFU subrack in order to supply power for the DDPUs or DFCUs.

Structure

The power cable between the Busbar and the DAFU subrack is a multiple-branch cable. Each cable at the busbar end has three sub-branches, supplying power for the DDPUs or DFCUs in the DAFU subrack, respectively. **Figure 5-6** shows the structure of the power cable from the Busbar to the DAFU.

Figure 5-6 Structure of the power cable from the Busbar to the DAFU subrack



(1) 3V3 power connector (2) Common 2-pin connector

Pin Assignment

The pin assignment of the three sub-branches are the same. We take the first sub-branch as an example. The first sub-branch leads the power from the Busbar to the left-most module in the DAFU subrack, as shown in **Table 5-5**.

Table 5-5 Pins assignment for the power cable between the Busbar and the DAFU subrack

Cable	X1 End	X4 End	Core Color
W1	X1.A3	X4.1	Blue
W4	X1.A1	X4.2	Black

Installation Positions

Table 5-6 describes the installation positions of the power cable between the Busbar to the DAFU subrack.

Table 5-6 Installation positions of the power cable between the Busbar and the DAFU subrack

Power Cable Type	One End (Common 2-Pin Connector)	Other End (3V3 Power Connector)
Power cable between the Busbar and the DAFU subrack	Connecting to port 1 on the first Busbar	Connecting to the PWR port on the DDPU or the DC-IN-48V port on the DFCU in the DAFU subrack

NOTE

One BTS3012 cabinet is configured with two power cables between the Busbar and the DAFU subrack. The two power cables are controlled by one Busbar.

5.3.2 Power Cable Between the BTS3012 Busbar and the DTRU Subrack

The power cable between the Busbar to the DTRU subrack is used to lead the power on the Busbar to the DTRUs in the DTRU subrack.

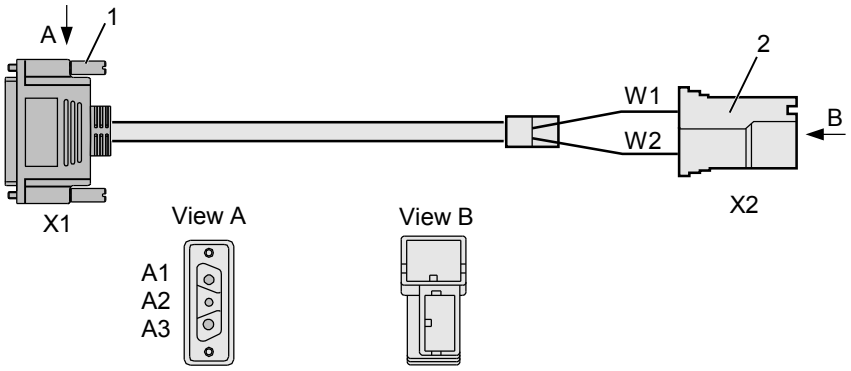
Function

The power cable between the Busbar to the DTRU subrack is used to lead the power on the Busbar to the DTRUs in the DTRU subrack.

Structure

The power cable between the Busbar and the DTRU subrack consists of six independent cables. Each DTRU is configured with one independent power cable. These cables are same in structure and appearance. **Figure 5-7** shows the power cable between the Busbar and the DTRU subrack.

Figure 5-7 Structure of the power cable between the Busbar and the DTRU subrack



(1) 3V3 power connector (2) Common 2-pin connector

Pin Assignment

Table 5-7 describes the pin assignment for the power cable between the Busbar and the DTRU subrack.

Table 5-7 Pin assignment for the power cable between the Busbar and the DTRU subrack

Cable	X1 End	X2 End	Core Color
W1	X1.A3	X2.1	Blue
W2	X1.A1	X2.2	Black

Installation Positions

The power cable between the Busbar and the DTRU subrack consists of six independent cables. **Table 5-8** shows the installation positions of the cable.

Table 5-8 Installation positions of the power cable between the Busbar and the DTRU subrack

Power Cable Type	One End (Common 2-Pin Connector)	Other End (3V3 Power Connector)
Power cable between the Busbar and DTRU 5	Connecting to the second port on the Busbar (from top to bottom)	Connecting to port PWR on the front panel of DTRU 5
Power cable between the Busbar and DTRU 4	Connecting to the port on the third Busbar	Connecting to port PWR on the front panel of DTRU 4
Power cable between the Busbar and DTRU 3	Connecting to the port on the fourth Busbar	Connecting to port PWR on the front panel of DTRU 3

Power Cable Type	One End (Common 2-Pin Connector)	Other End (3V3 Power Connector)
Power cable between the Busbar and DTRU 2	Connecting to the port on the fifth Busbar	Connecting to port PWR on the front panel of DTRU 2
Power cable between the Busbar and DTRU 1	Connecting to the port on the sixth Busbar	Connecting to port PWR on DTRU 1
Power cable between the Busbar and DTRU 0	Connecting to the port on the seventh Busbar	Connecting to port PWR on the front panel of DTRU 0

5.3.3 Power Cable Between the BTS3012 Busbar and the FAN Subrack

The power cable between the Busbar and the FAN subrack is used to lead the power to the FAN subrack and supply power for the FAN Box.

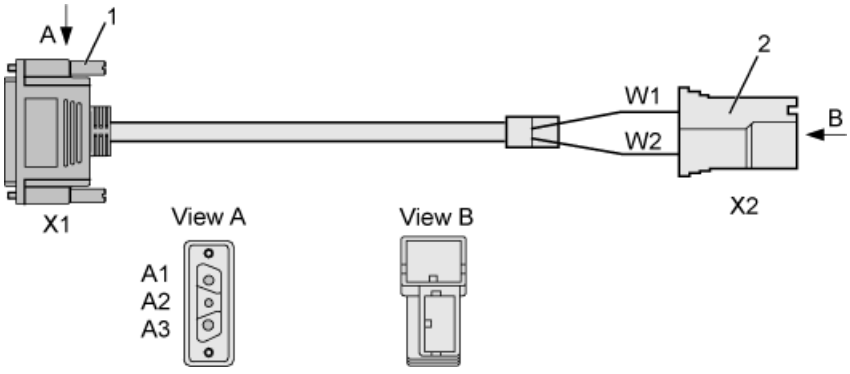
Function

The power cable between the Busbar and the FAN subrack is used to lead the power to the FAN subrack and supply power for the FAN Box.

Structure

Figure 5-8 shows the structure of the power cable between the Busbar and the FAN subrack.

Figure 5-8 Structure of the power cable between the Busbar and the FAN subrack



(1) 3V3 power connector (2) Common 2-pin connector

Pin Assignment

Table 5-9 describes the pin assignment for the power cable between the Busbar and the FAN subrack.

Table 5-9 Pin assignment for the power cable between the Busbar and the FAN subrack

Cable	X1 End	X2 End	Core Color
W1	X1.A3	X2.1	Blue
W2	X1.A1	X2.2	Black

Installation Positions

Table 5-10 describes the structure of the power cable between the Busbar and the FAN subrack.

Table 5-10 Installation positions of the power cable between the Busbar and the FAN subrack

Power Cable Type	One End (Common 2-Pin Connector)	Other End (3V3 Power Connector)
Power Cable between the Busbar and the FAN Subrack	Connecting to the port on the eighth Busbar	Connecting to port PWR on the front panel of the FAN Box

5.3.4 Power Cable Between the BTS3012 Busbar and the Common Subrack

The power cable between the Busbar and the common subrack is used to lead the power to the common subrack and supply power for the common subrack.

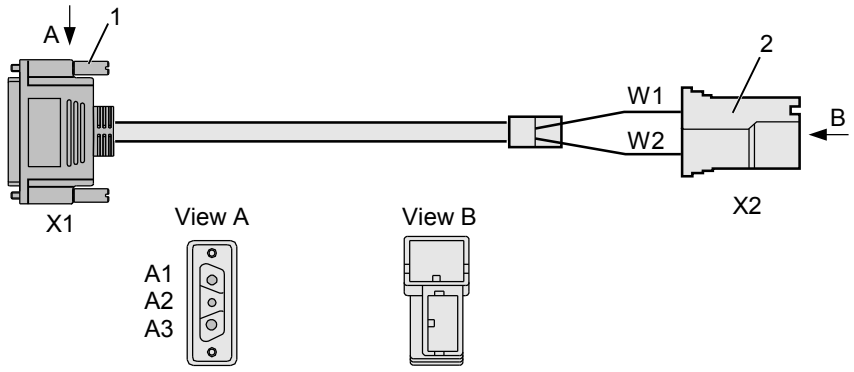
Function

The power cable between the Busbar and the common subrack is used to lead the power to the common subrack and supply power for the common subrack.

Structure

Only one power cable is connected between the common subrack and the Busbar. **Figure 5-9** shows the structure of the power cable.

Figure 5-9 Structure of the power cable between the Busbar and the common subrack



(1) 3V3 power connector (2) Common 2-pin connector

Pin Assignment

Table 5-11 describes the pin assignment for the power cable between the Busbar and the common subrack.

Table 5-11 Pins assignment for the power cable between the Busbar and the common subrack

Cable	X1 End	X2 End	Core Color
W1	X1.A3	X2.1	Blue
W2	X1.A1	X2.2	Black

Installation Positions

Table 5-12 describes the installation position of the power cable between the Busbar and the common subrack.

Table 5-12 Installation positions of the power cable between the Busbar and the common subrack

Power Cable Type	One End (Common 2-Pin Connector)	Other End (3V3 Power Connector)
Power cable between the Busbar and the common subrack	Connecting to the port on the ninth Busbar	Connecting to port POWER on the front panel of the DCCU

5.4 Transmission Cables of the BTS3012

The transmission cables of the BTS3012 consist of E1 cables, E1 signal transfer cables, optical cables, and Ethernet cables.

5.4.1 E1 Cable of the BTS3012/BTS3012AE

The E1 cable consists of 75-ohm E1 cable and 120-ohm cable.

5.4.2 Optical Cable of the BTS3012/BTS3012AE
The optical cable is used to transmit optical signals between the cabinet and other devices. The optical cable of the BTS3012/BTS3012AE uses the multi-mode fibers for short-distance transmission.

5.4.3 Ethernet Cable of the BTS3012/BTS3012AE
The ethernet cables are classified into straight-through cable and crossover cable to transmit maintenance signals.

5.4.4 E1 Signal Transfer Cable of the BTS3012
The E1 signal transfer cable transfers eight routes of E1 signals to the DCCU of the cabinet.

5.4.1 E1 Cable of the BTS3012/BTS3012AE

The E1 cable consists of 75-ohm E1 cable and 120-ohm cable.

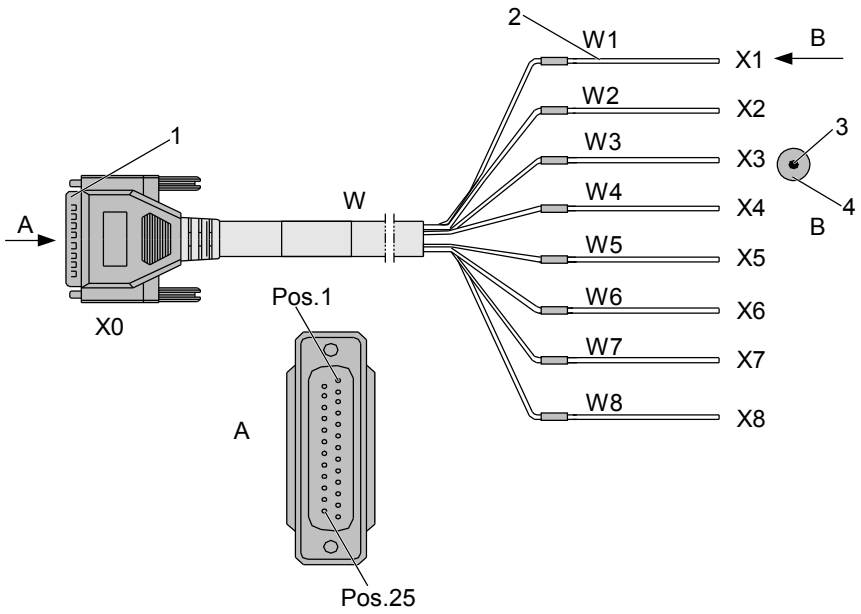
Function

The 75-ohm E1 cable and 120-ohm cable are used to transmit the E1 trunk signal outside the cabinet.

Structure

The 75-ohm E1 cable is a coaxial cable that consists of eight sub coaxial cables. Every two sub coaxial cables form one E1 route. Therefore, each 75-ohm E1 cable provides four E1 routes. One end of the 75-ohm E1 cable is a DB25 male connector, and the other is bare. The connectors are made on site. **Figure 5-10** shows the 75-ohm E1 cable.

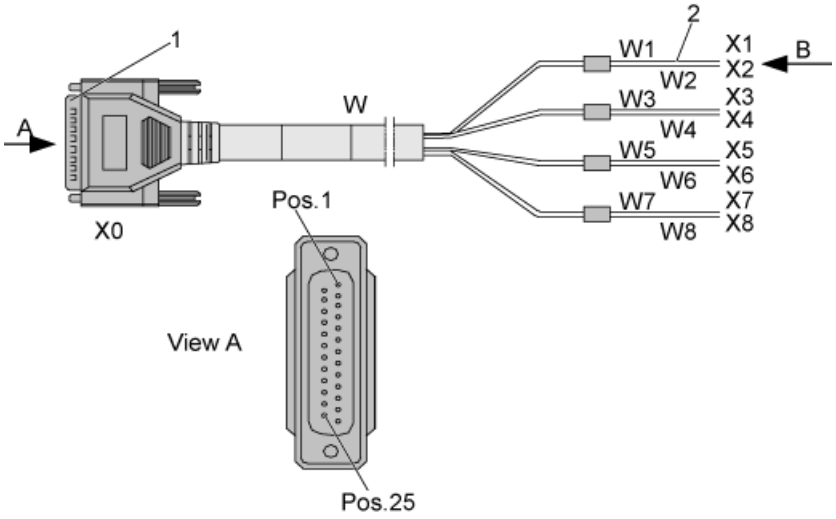
Figure 5-10 Structure of the 75-ohm E1 cable



(1) DB25 male connector (X0)
(2) 75-ohm E1 coaxial wire (X1–X8)
(3) Coaxial core (tip)
(4) Outer conductor (ring, that is, shielding layer)

The 120-ohm E1 cable consists of four pairs of 120-ohm twisted pairs. Each pair forms one E1 route. Therefore, each 120-ohm E1 cable provides four E1 routes. One end of the 120-ohm E1 cable is a DB25 male connector, and the other is bare. The connectors are made on site. **Figure 5-11** shows the structure of the cable.

Figure 5-11 Structure of the 120-ohm E1 cable



(1) DB25 male connector (X0) (2) 120-ohm E1 twisted pair (X1–X8)

Pin Assignment

Table 5-13 describes the pin assignment for the 75-ohm E1 cable and the 120-ohm cable.

Table 5-13 Pin assignment for the E1 cable

Core Wire	Coaxial Cable Wire/ Outer Conductor	Pin of the DB25 Connector	Coaxial Cable Label
W1	X1.tip	X0.24	CHAN 0 TX
	X1.ring	X0.25	
W2	X2.tip	X0.13	CHAN 0 RX
	X2.ring	X0.12	
W3	X3.tip	X0.11	CHAN 1 TX
	X3.ring	X0.10	
W4	X4.tip	X0.9	CHAN 1 RX
	X4.ring	X0.8	
W5	X5.tip	X0.7	CHAN 2 TX
	X5.ring	X0.6	
W6	X6.tip	X0.5	CHAN 2 RX

Core Wire	Coaxial Cable Wire/ Outer Conductor	Pin of the DB25 Connector	Coaxial Cable Label
	X6.ring	X0.4	
W7	X7.tip	X0.3	CHAN 3 TX
	X7.ring	X0.2	
W8	X8.tip	X0.14	CHAN 3 RX
	X8.ring	X0.15	

Installation Positions

The installation positions of the 75-ohm E1 cable and 120-ohm cable in the BTS3012/ BTS3012AE are same, as shown in **Table 5-14**.

Table 5-14 Installation positions of the E1 cable

Cable Type	BTS Type	One End (DB25 Male Connector)	Other End (Bare Wire)
75-ohm/120-ohm E1 cable	BTS3012	TR port on the DELC	Connecting to a transmission device such as an internal transmission interface box
	BTS3012AE	TR port on the DELU	Connecting to a transmission device such as an internal transmission interface box

5.4.2 Optical Cable of the BTS3012/BTS3012AE

The optical cable is used to transmit optical signals between the cabinet and other devices. The optical cable of the BTS3012/BTS3012AE uses the multi-mode fibers for short-distance transmission.

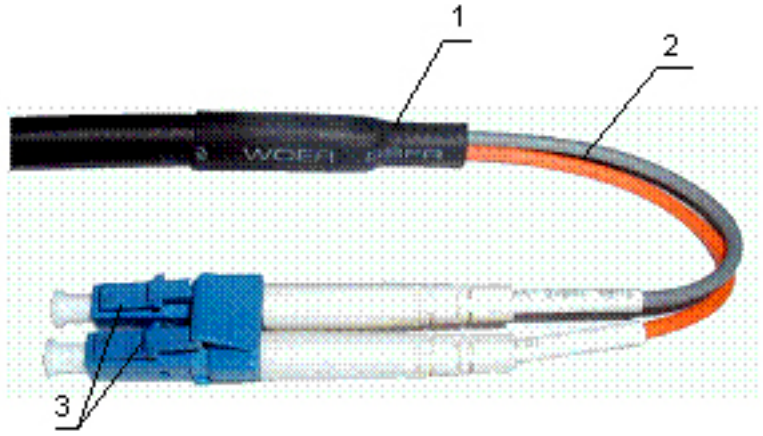
Function

The optical cable is used to transmit optical signals between the cabinet and other devices. The optical cable of the BTS3012/BTS3012AE uses the multi-mode fibers for short-distance transmission.

Structure

Both ends of the multi-mode optical fiber are LC connectors. **Figure 5-12** shows the structure of the optical cable.

Figure 5-12 Structure of the optical cable



(1) Heat-shrink tube (2) Tail wire

(3) LC connector

CAUTION

Apply a protective cap when the optical cable connector is not used.

Pin Assignment

None.

Installation Positions

Table 5-15 describes the installation positions of the optical cable.

Table 5-15 Installation positions of the optical cable

Cable Type	One End	Other End (LC Connector)
Optical cable	Connecting to the optical transmission equipment, such as Metro100	Connecting to the transmission interface box such as the ODF

5.4.3 Ethernet Cable of the BTS3012/BTS3012AE

The ethernet cables are classified into straight-through cable and crossover cable to transmit maintenance signals.

Function

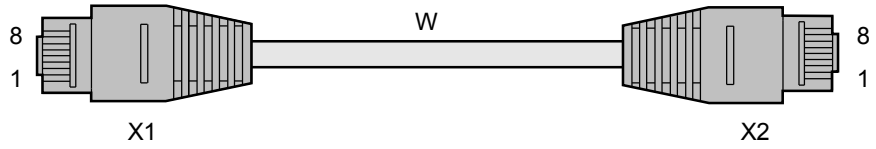
The ethernet cables are classified into straight-through cable and crossover cable to transmit maintenance signals.

- The straight-through cable connects the PC where the site maintenance terminal system is installed to the network.
- The crossover cable directly connects the PC where the site maintenance terminal system is installed to the BTS.

Structure

The crossover cable and straight-through cable use the same connector. However, they differ in connector wiring. Both ends of the ethernet cable use RJ45 connectors, as shown in **Figure 5-13**.

Figure 5-13 Structure of the Ethernet cable



Pin Assignment

Table 5-16 describes the pin assignment for the Ethernet cable.

Table 5-16 Pins assignment for the Ethernet cable

X1 End	Core Color	Core Type	X2 End of the Straight-Through Cable	X2 End of the Crossover Cable
X1.2	Orange	Twisted pair	X2.2	X2.6
X1.1	White and orange		X2.1	X2.3
X1.6	Green	Twisted pair	X2.6	X2.2
X1.3	White and green		X2.3	X2.1
X1.4	Blue	Twisted pair	X2.4	X2.4
X1.5	Blue and White		X2.5	X2.5
X1.8	Brown	Twisted pair	X2.8	X2.8
X1.7	White and Brown		X2.7	X2.7

Installation Positions

The installation positions of the straight-through cable and crossover cable are same, as shown in **Table 5-17**.

Table 5-17 Installation positions of Ethernet cables

Type	One End	Other End
Straight-through cable	Connecting to the MMI port on the DTMU	Connecting to the HUB or the LAN switch port
	Connecting to the network port of the PC where the site maintenance terminal system is installed	
Crossover cable	Connecting to the MMI port on the DTMU	Connecting to the network port of the PC where the site maintenance terminal system is installed

5.4.4 E1 Signal Transfer Cable of the BTS3012

The E1 signal transfer cable transfers eight routes of E1 signals to the DCCU of the cabinet.

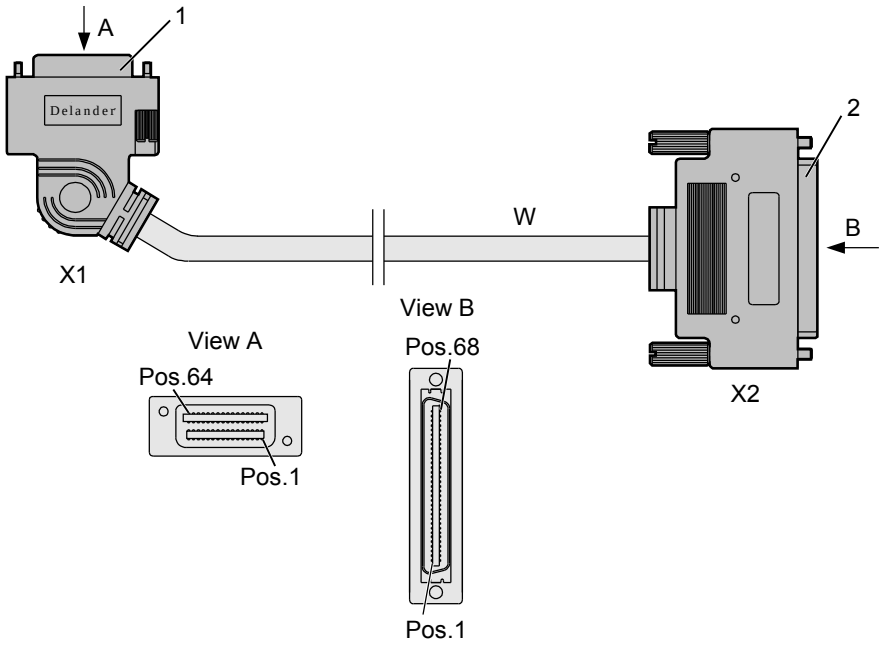
Function

The E1 signal transfer cable transfers eight routes of E1 signals to the DCCU of the cabinet.

Structure

Figure 5-14 shows the structure of the E1 signal transfer cable.

Figure 5-14 Structure of the E1 signal transfer cable



(1) MD64 male connector (2) MD68 male connector

Pin Assignment

Table 5-18 describes the pin assignment for the E1 signal transfer cable.

Table 5-18 Pin assignment for the E1 signal transfer cable

Pin at the X1 End (MD64 Male Connector)	Core Type	Pin at the X2 End (MD64 Male Connector)
X1.11	Twisted pair	X2.5
X1.9		X2.6
X1.27	Twisted pair	X2.39
X1.25		X2.40
X1.15	Twisted pair	X2.7
X1.13		X2.8
X1.31	Twisted pair	X2.41
X1.29		X2.42
X1.43	Twisted pair	X2.10
X1.41		X2.11
X1.59	Twisted pair	X2.44
X1.57		X2.45
X1.47	Twisted pair	X2.12
X1.45		X2.13
X1.63	Twisted pair	X2.46
X1.61		X2.47
X1.3	Twisted pair	X2.27
X1.1		X2.28
X1.19	Twisted pair	X2.61
X1.17		X2.62
X1.7	Twisted pair	X2.29
X1.5		X2.30
X1.23	Twisted pair	X2.63
X1.21		X2.64
X1.35	Twisted pair	X2.31
X1.33		X2.32

Pin at the X1 End (MD64 Male Connector)	Core Type	Pin at the X2 End (MD64 Male Connector)
X1.51	Twisted pair	X2.65
X1.49		X2.66
X1.39	Twisted pair	X2.33
X1.37		X2.34
X1.55	Twisted pair	X2.67
X1.53		X2.68

Installation Positions

Table 5-19 describes the installation positions of the E1 signal transfer cable.

Table 5-19 Installation positions of the E1 signal transfer cable

Cable Type	One End (MD64 Male Connector)	Other End (MD68 Male Connector)
E1 signal transfer cable	Connecting to port TRAN on the panel of the DCCU	Connecting to the DCTB on the cabinet top subrack

5.5 Signal Cables of the BTS3012

The signal cables of the BTS3012 are used to transmit the following signals: lightning protection failure alarm signals on the cabinet top, lightning protection failure alarm signals for combined cabinets, power detection signals, signals for short-circuiting the combiner, signals for combined cabinets, signals for cabinet groups, signals for Boolean value outputs, signals for Boolean value inputs, dedicated monitor signals, signals from the environment monitoring device, signals for controlling the RET antenna, signals between the DCTB and the DAFU subrack, signals between the DCCU/DCSU and the DCTB TOP, signals between the DCSU and the DTRB, Boolean value transfer signals, and FAN subrack signals.

5.5.1 Lightning Protection Failure Alarm Cable of the BTS3012

The lightning protection failure alarm cable transmits the Boolean value signals of the DC lightning arrester on the cabinet top to the DSAC.

5.5.2 Lightning Protection Failure Alarm Cable Between BTS3012 Combined Cabinets

The lightning protection failure alarm cable between combined cabinets transmits the Boolean value signals of the DC lightning arresters between the main cabinet and the extension cabinets.

5.5.3 Power Detection Cable of the BTS3012/BTS3012AE

The power detection cable transmits the RF signal sent from the coupling unit in the DFCU/DFCB to the power detection unit.

5.5.4 Cable for the Combiner on the DTRU of the BTS3012/BTS3012AE

The cable for the combiner on the DTRU is used to connect the TX port with the IN port on the DTRU for the sake of signal combination.

5.5.5 Signal Cable Between BTS3012/BTS3012AE Combined Cabinets

The signal cable between combined cabinets transmits signals between combined cabinets.

5.5.6 Signal Cable Between BTS3012/BTS3012AE Cabinet Groups

The signal cable between cabinet groups transmits signals between cabinet groups.

5.5.7 Signal Cable Between the BTS3012 and the BTS312

This cable connects a BTS3012 cabinet with a BTS312 cabinet.

5.5.8 Boolean Value Output Cable of the BTS3012

The Boolean value output cable is used to output control signals from the BTS to other devices, ensuring the control of BTS over other devices.

5.5.9 Boolean Value Input Cable of the BTS3012

The Boolean value input cable transmits the status information of the external devices to the BTS, helping the BTS known the status of the external devices and take relevant actions.

5.5.10 EAC Signal Cable of the BTS3012

The EAC signal cable transmits the Boolean value alarm from the external devices to the BTS, helping the BTS known the status of the external devices and take relevant actions.

5.5.11 Dedicated Monitoring Signal Cable of the BTS3012

The dedicated monitoring signal cable provides six dedicated monitoring signal inputs from the temperature sensor, humidity sensor, smoke sensor, water sensor, infrared sensor, and door sensor.

5.5.12 Environment Monitoring Signal Cable of the BTS3012

The environment monitoring signal cable transmits signals between the BTS and the environment monitoring device.

5.5.13 RET Control Signal Cable of the BTS3012/BTS3012AE

The RET control signal cable transmits signals between the DATU and the Bias-Tee on the cabinet top.

5.5.14 Signal Cables Between the DCTB and the DAFU Subrack in the BTS3012

The signal cables between the DCTB and the DAFU subrack transmit signals between the cabinet top and DDPU/DCOM/DFCU in the DAFU subrack. The main signals include DAFU_FCLK signals, CBUS3 signals, in-position signals, and frequency detection signals.

5.5.15 TOP Signal Cable Between the DCCU/DCSU and the DCTB of the BTS3012

The TOP signal cable between the DCCU/DCSU and the DCTB transmit signals between the DCCU/DCSU and the DCTB.

5.5.16 Signal Cable between the DCSU and the DTRB in the BTS3012/BTS3012AE

The signal cable between the DCSU and the DTRB transmit signals between the DTRU and the DCSU. The signals include data bus signals, clock bus signals, CBUS2 signals, and in-position signals.

5.5.17 Boolean Value Signal Transfer Cable of the BTS3012

The Boolean value signal transfer cable transfers Boolean value signals and analog signals inside the cabinet. It also transfers the external Boolean value signals from the DCTB.

5.5.18 FAN Subrack Signal Transfer Cable of the BTS3012

The FAN subrack signal transfer cable transfers the information of the FAN Box to the DCCU.

5.5.19 Diversity Receive Short-Circuiting Cable of the BTS3012/BTS3012AE

The diversity receive short-circuiting cables are used to transfer the diversity receive signals from the antenna subsystem when the DFCU is used.

5.5.20 Four-In-One Short-Circuiting Cable of the BTS3012/BTS3012AE

The four-in-one short-circuiting cable outputs four routes of combined signals when the DFCU or DFCB is used. When the DFCU and the DFCB is cascaded, six routes of combined signals can be obtained.

5.5.21 Signal Cable Between the DFCB and the DFCU in the BTS3012/BTS3012AE
The signal cable between the DFCB and the DFCU transmits one route of combined RF signals (two-in-one) to the DFCU so that the DFCU can combine six routes of RF signals into one route for transmission.

5.5.22 Signal Transfer Cable Between BTS3012 Combined Cabinets
The signal transfer cable between combined cabinets connects the DCTB with the DCSU. It not only transmits clock signals, control signals, and data signals between the main cabinet and the extension cabinet, but also transmits Boolean value alarm signals.

5.5.1 Lightning Protection Failure Alarm Cable of the BTS3012

The lightning protection failure alarm cable transmits the Boolean value signals of the DC lightning arrester on the cabinet top to the DSAC.

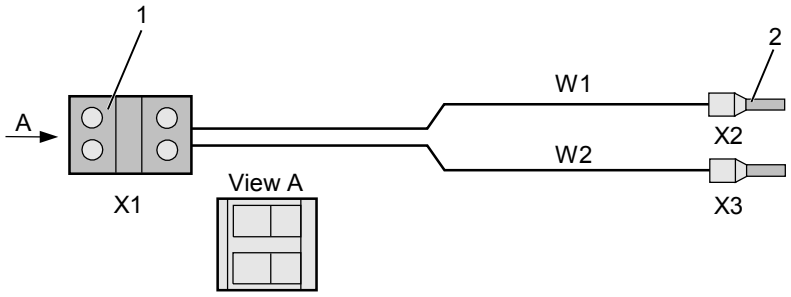
Function

The lightning protection failure alarm cable transmits the Boolean value signals of the DC lightning arrester on the cabinet top to the DSAC, notifying the cabinet of the availability of the DC lightning arrester.

Structure

Figure 5-15 shows the structure of the lightning protection failure alarm cable.

Figure 5-15 Structure of the lightning protection failure alarm cable



(1) 2-pin phoenix connector (2) Cord end terminal

Pin Assignment

Table 5-20 describes the pin assignment for the lightning protection failure alarm cable.

Table 5-20 Pin assignment for the lightning protection failure alarm cable

Core Wire	2-Pin Phoenix Connector at the X1 End	Pins of the Core End Connector	Core Color
W1	X1.1	X2	Black

Core Wire	2-Pin Phoenix Connector at the X1 End	Pins of the Core End Connector	Core Color
W2	X1.2	X3	Blue

Installation Positions

Table 5-21 describes the installation positions of the lightning protection failure alarm cable.

Table 5-21 Installation positions of the lightning protection failure alarm cable

Cable Type	One End (2-Pin Phoenix Connector)	Other End (Core End Connector)
Lightning protection failure alarm cable	In a single cabinet, the lightning protection failure alarm cable is connected to the S1+S1- port on the DSAC.	One end of the core end terminal is connected to the Alarm and GND terminals of the DC lightning protection arrester on the cabinet top.
	In combined cabinets, the lightning protection failure alarm cable of the main cabinet connects to the S1+S1- port on the DSAC of the main cabinet.	
	In combined cabinets, the lightning protection failure alarm cable of the extension cabinet connects to the S2+S2- port on the DSAC of the extension cabinet	

5.5.2 Lightning Protection Failure Alarm Cable Between BTS3012 Combined Cabinets

The lightning protection failure alarm cable between combined cabinets transmits the Boolean value signals of the DC lightning arresters between the main cabinet and the extension cabinets.

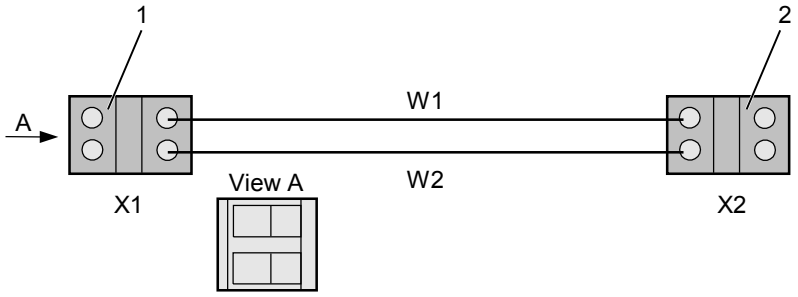
Function

The lightning protection failure alarm cable between combined cabinets transmits the Boolean value signals of the DC lightning arresters between the main cabinet and the extension cabinets.

Structure

Figure 5-16 shows the structure of the lightning protection failure alarm cable between combined cabinets.

Figure 5-16 Structure of the lightning protection failure alarm cable between combined cabinets



(1) 2-pin phoenix connector (2) 2-pin phoenix connector

NOTE

The phoenix terminals at both ends of the lightning protection failure alarm cable of the combined cabinets are made on site.

Pin Assignment

Table 5-22 describes the pin assignment for the lightning protection failure alarm cable between combined cabinets.

Table 5-22 Pins assignment for the lightning protection failure alarm cable between combined cabinets

Core Wire	X1 End	X2 End	Core Color
W1	X1.1	X2.1	Black
W2	X1.2	X2.2	Black

Installation Positions

Table 5-23 describes the installation positions of the lightning protection failure alarm cable of the combined cabinets.

Table 5-23 Installation positions of the lightning protection failure alarm cable of the combined cabinets

Cable Type	One End	Other End
Lightning protection failure alarm cable of the combined cabinets	In combined cabinets, it is connected to the S2+S2- port on the DSAC of the main cabinet.	In combined cabinets, it is connected to the S1+S1- port on the DSAC of the extension cabinet.

5.5.3 Power Detection Cable of the BTS3012/BTS3012AE

The power detection cable transmits the RF signal sent from the coupling unit in the DFCU/DFCB to the power detection unit.

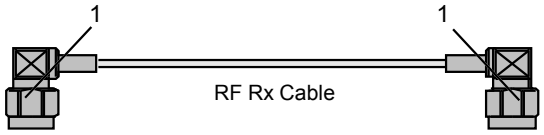
Function

The power detection cable transmits the RF signal sent from the coupling unit in the DFCU/DFCB to the power detection unit. This cable can be categorized into forward power detection cable and reverse power detection cable. The forward power detection cable has the same structure with the reverse power detection cable.

Structure

Figure 5-17 shows the structure of the power detection cable.

Figure 5-17 Structure of the power detection cable



(1) SMA elbow male connector

Pin Assignment

None.

Installation Positions

Table 5-24 describes the installation positions of the power detection cable.

Table 5-24 Installation positions of the power detection cable

Cable	One End	Other End
Forward power detection cable	Connecting to the PF in port on the DFCU/DFCB panel	Connecting to the PF out port on the DFCU/DFCB panel
Reverse power detection cable	Connecting to the PR in port on the DFCU/DFCB panel	Connecting to the PR out port on the DFCU/DFCB panel

5.5.4 Cable for the Combiner on the DTRU of the BTS3012/ BTS3012AE

The cable for the combiner on the DTRU is used to connect the TX port with the IN port on the DTRU for the sake of signal combination.

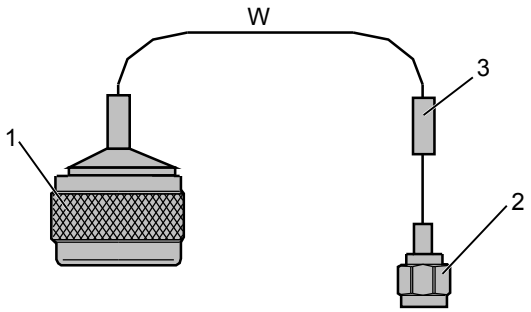
Function

This cable connects the TX port with the IN port on the DTRU (type A), enabling the signal combination for transmission.

Structure

Figure 5-18 shows the cable for the combiner on the DTRU.

Figure 5-18 Structure of the cable for the combiner on the DTRU



(1) N male connector (2) SMA male connector (3) Label

Pin Assignment

None.

Installation Positions

Table 5-25 describes the installation positions of the cable for the combiner on the DTRU.

Table 5-25 Installation positions of the cable for the combiner on the DTRU

Cable Type	One End (N Type)	Other End (SMA Type)
Cable for the combiner on the DTRU	• Connecting to port TX1 on the DTRU (type A) • Connecting to port TX2 on the DTRU (type A)	• Connecting to port IN1 on the DTRU (type A) corresponding to port TX1 • Connecting to port IN2 on the DTRU (type A) corresponding to port TX2

5.5.5 Signal Cable Between BTS3012/BTS3012AE Combined Cabinets

The signal cable between combined cabinets transmits signals between combined cabinets.

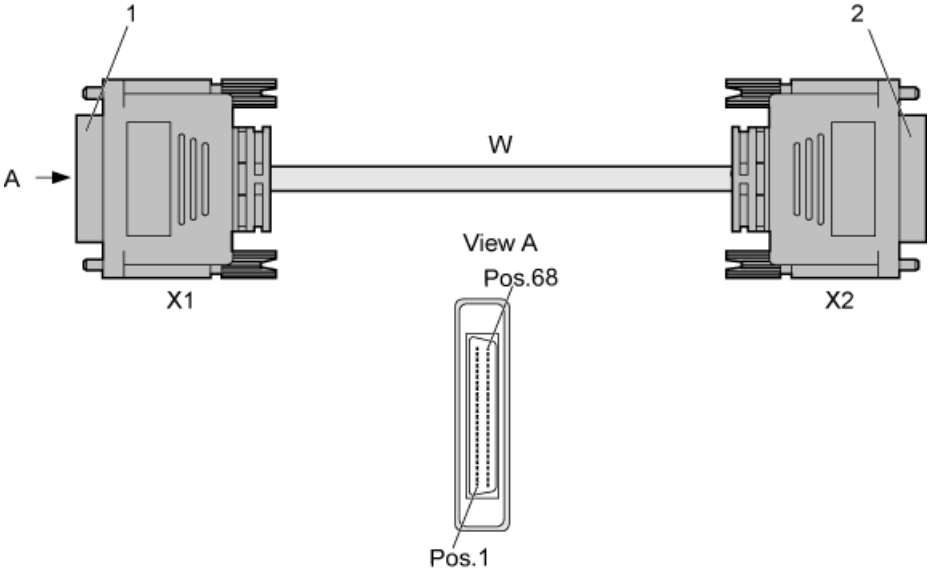
Function

The signal cable between combined cabinets transmits signals between combined cabinets.

Structure

Figure 5-19 shows the structure of the signal cable between combined cabinets.

Figure 5-19 Structure of the signal cable between combined cabinets



(1) MD68 male connector (2) MD68 male connector

Pin Assignment

Table 5-26 describes the pin assignment for the signal cable between combined cabinets.

Table 5-26 Pins assignment for the signal cable between combined cabinet

Pin at the X1 End	Pin at the X2 End	Core Type
X1.2	X2.2	Twisted pair
X1.3	X2.3	
X1.4	X2.4	Twisted pair
X1.5	X2.5	
X1.7	X2.7	Twisted pair
X1.8	X2.8	
X1.9	X2.9	Twisted pair
X1.10	X2.10	
X1.36	X2.36	Twisted pair
X1.37	X2.37	
X1.38	X2.38	Twisted pair
X1.39	X2.39	
X1.41	X2.41	Twisted pair
X1.42	X2.42	

Pin at the X1 End	Pin at the X2 End	Core Type
X1.43	X2.43	Twisted pair
X1.44	X2.44	
X1.46	X2.46	Twisted pair
X1.47	X2.47	
X1.48	X2.48	Twisted pair
X1.49	X2.49	
X1.22	X2.22	Twisted pair
X1.23	X2.23	
X1.25	X2.25	Twisted pair
X1.26	X2.26	
X1.51	X2.51	Twisted pair
X1.52	X2.52	
X1.53	X2.53	Twisted pair
X1.54	X2.54	
X1.28	X2.28	Twisted pair
X1.29	X2.29	
X1.30	X2.30	Twisted pair
X1.31	X2.31	
X1.56	X2.56	Twisted pair
X1.57	X2.57	
X1.59	X2.59	Twisted pair
X1.60	X2.60	
X1.12	X2.12	Twisted pair
X1.13	X2.13	
X1.14	X2.14	Twisted pair
X1.15	X2.15	
X1.62	X2.62	Twisted pair
X1.63	X2.63	
X1.64	X2.64	Twisted pair
X1.65	X2.65	

Pin at the X1 End	Pin at the X2 End	Core Type
X1.17	X2.17	Twisted pair
X1.18	X2.18	
X1.19	X2.19	Twisted pair
X1.20	X2.20	

Installation Positions

Table 5-27 describes the installation positions of the signal cable between combined cabinets.

Table 5-27 Installation positions of the signal cable between combined cabinets

Cabinet Type	One End (MD68 Male Connector)	Other End (MD68 Male Connector)
BTS3012	Connecting to the DCF port on the DCTB of one cabinet	Connecting to the DCF port on the DCTB of another cabinet
BTS3012AE	Connecting to the TO SLAVE CABINET port on the DSCB of one cabinet	Connecting to the TO SLAVE CABINET port on the DSCB of another cabinet

5.5.6 Signal Cable Between BTS3012/BTS3012AE Cabinet Groups

The signal cable between cabinet groups transmits signals between cabinet groups.

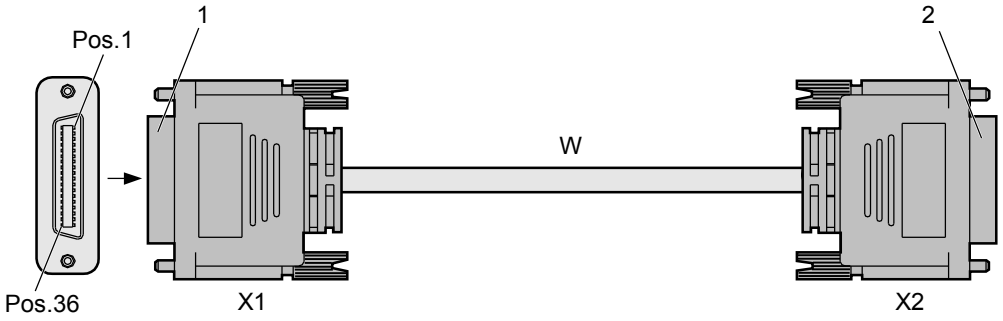
Function

The signal cable between cabinet groups transmits signals between cabinet groups.

Structure

Figure 5-20 shows the structure of the signal cable between cabinet groups.

Figure 5-20 Structure of the signal cable between cabinet groups



(1) MD36 male connector (2) MD36 male connector

Pin Assignment

Table 5-28 describes the pin assignment for the signal cable between cabinet groups.

Table 5-28 Pins assignment for the signal cable between cabinet groups

Pin at the X1 End	Pin at the X2 End	Core Type
X1.1	X2.1	Twisted pair
X1.19	X2.19	
X1.20	X2.2	Twisted pair
X1.21	X2.3	
X1.22	X2.4	Twisted pair
X1.23	X2.5	
X1.24	X2.6	Twisted pair
X1.25	X2.7	
X1.26	X2.8	Twisted pair
X1.27	X2.9	
X1.29	X2.11	Twisted pair
X1.30	X2.12	
X1.31	X2.13	Twisted pair
X1.32	X2.14	
X1.33	X2.15	Twisted pair
X1.34	X2.16	
X1.35	X2.17	Twisted pair
X1.36	X2.18	
X1.2	X2.20	Twisted pair
X1.3	X2.21	
X1.4	X2.22	Twisted pair
X1.5	X2.23	
X1.6	X2.24	Twisted pair
X1.7	X2.25	
X1.8	X2.26	Twisted pair
X1.9	X2.27	
X1.11	X2.29	Twisted pair

Pin at the X1 End	Pin at the X2 End	Core Type
X1.12	X2.30	
X1.13	X2.31	Twisted pair
X1.14	X2.32	
X1.15	X2.33	Twisted pair
X1.16	X2.34	
X1.17	X2.35	Twisted pair
X1.18	X2.36	

Installation Positions

Table 5-29 describes the installation positions of the signal cable between cabinet groups.

Table 5-29 Installation positions of the signal cable between cabinet groups

Cable Type	BTS Type	One End (MD36 Male Connector)	Other End (MD36 Male Connector)
Signal cable between cabinet groups	BTS3012	Connecting to the CKB1 or CKB2 port on the top of one main cabinet in the cabinet group	Connecting to the CKB1 or CKB2 port on the top of the other main cabinet in the cabinet group
	BTS3012AE	Connecting to TO SLAVE GROUP1 or TO SLAVE GROUP2 port on the DSCB of one main cabinet in the cabinet group	Connecting to TO SLAVE GROUP1 or TO SLAVE GROUP2 port on the DSCB of the other main cabinet in the cabinet group

5.5.7 Signal Cable Between the BTS3012 and the BTS312

This cable connects a BTS3012 cabinet with a BTS312 cabinet.

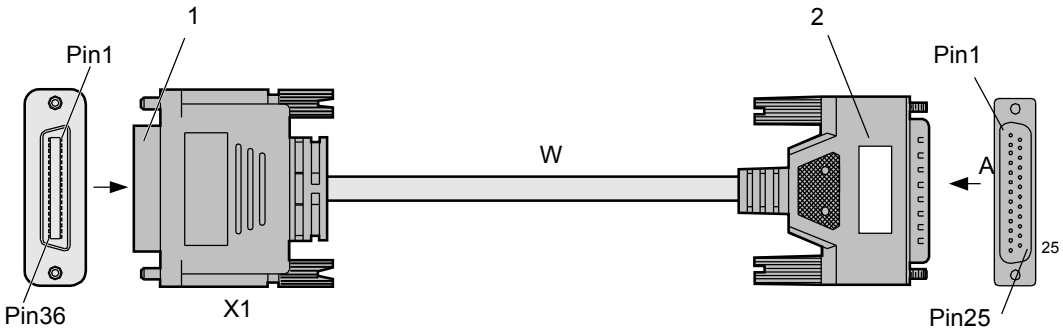
Function

This cable connects a BTS3012 cabinet to a BTS312 cabinet in one cabinet group.

Structure

One end of the combined-cabinet cable is an MD36 male connector and the other end of the cable is a DB25 male connector. See details in **Figure 5-21**

Figure 5-21 Appearance of the combined-cabinet cable



(1) MD36 male connector (2) DB25 male connector

Pin Assignment

Table 5-30 describes the pin assignment for the combined-cabinet signal cable.

Table 5-30 Pin assignment for the combined-cabinet signal cable

Pin at the X1 End	Pin at the X2 End	Core Type
X1.1	X2.2	Twisted pair
X1.19	X2.14	
X1.20	X2.25	Twisted pair
X1.21	X2.13	
X1.22	X2.19	Twisted pair
X1.23	X2.7	
X1.24	X2.10	Twisted pair
X1.25	X2.22	
X1.26	X2.4	Twisted pair
X1.27	X2.16	
X1.29	X2.9	Twisted pair
X1.30	X2.21	
X1.31	X2.3	Twisted pair
X1.32	X2.15	
X1.33	X2.23	Twisted pair
X1.34	X2.11	
X1.35	X2.17	Twisted pair
X1.36	X2.5	

Installation Positions

Table 5-31 describes the installation positions of the combined-cabinet signal cable.

Table 5-31 Installation positions of the combined-cabinet signal cable

Cable Type	One End (MD36 Male Connector)	Other End (DB25 Male Connector)
Combined-cabinet cable	Connects to the CKB1 or CKB2 port on the top of a BTS3012 cabinet	Connects to the CKB1 or CKB2 port on the top of a BTS312 cabinet

5.5.8 Boolean Value Output Cable of the BTS3012

The Boolean value output cable is used to output control signals from the BTS to other devices, ensuring the control of BTS over other devices.

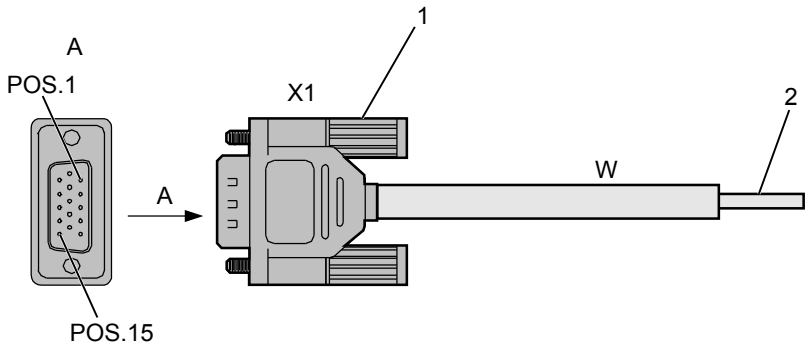
Function

The Boolean value output cable is used to output control signals from the BTS to other devices, ensuring the control of BTS over other devices.

Structure

Figure 5-22 shows the structure of the Boolean value output cable.

Figure 5-22 Structure of the Boolean value output cable



(1) DB15 male connector (2) Bare wire

Pin Assignment

Table 5-32 describes the pin assignment for the Boolean value output cable.

Table 5-32 Pin assignment for the Boolean value output cable

Pin of the Connector	Core Type	Core Color
X1.1	Twisted pair	White

Pin of the Connector	Core Type	Core Color
X1.2		Blue
X1.3	Twisted pair	White
X1.4		Orange
X1.6	Twisted pair	White
X1.7		Green
X1.8	Twisted pair	White
X1.9		Brown
X1.11	Twisted pair	White
X1.12		Grey
X1.13	Twisted pair	Red
X1.14		Blue

Installation Positions

Table 5-33 describes installation positions of the Boolean value output cable.

Table 5-33 Installation positions of the Boolean value output cable

Cable Type	One End (DB15 Male Connector)	Other End (Bare Wire)
Boolean value output cable	Connecting to the SWOUT port on the DMLC	The two twisted pairs at the bare end connect to the corresponding control devices.

5.5.9 Boolean Value Input Cable of the BTS3012

The Boolean value input cable transmits the status information of the external devices to the BTS, helping the BTS known the status of the external devices and take relevant actions.

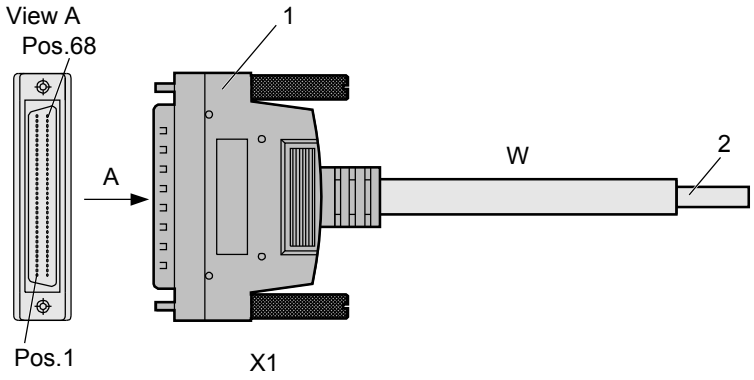
Function

The Boolean value input cable transmits the status information of the external devices to the BTS, helping the BTS known the status of the external devices and take relevant actions.

Structure

Figure 5-23 shows the structure of the Boolean value input cable.

Figure 5-23 Structure of the Boolean value output cable



(1) MD68 male connector (2) Bare wire

Pin Assignment

Table 5-34 describes the pin assignment for the Boolean value input cable.

Table 5-34 Pin assignment for the Boolean value input cable

Pin of the Connector	Core Type	Color of Bare Wire
X1.2	Twisted pair	White
X1.36		Blue
X1.3	Twisted pair	White
X1.37		Orange
X1.4	Twisted pair	White
X1.38		Green
X1.5	Twisted pair	White
X1.39		Brown
X1.6	Twisted pair	White
X1.40		Grey
X1.7	Twisted pair	Red
X1.41		Blue
X1.8	Twisted pair	Red
X1.42		Orange
X1.9	Twisted pair	Red
X1.43		Green
X1.10	Twisted pair	Red

Pin of the Connector	Core Type	Color of Bare Wire
X1.44		Brown
X1.11	Twisted pair	Red
X1.45		Grey
X1.12	Twisted pair	Black
X1.46		Blue
X1.13	Twisted pair	Black
X1.47		Orange
X1.14	Twisted pair	Black
X1.48		Green
X1.15	Twisted pair	Black
X1.49		Brown
X1.16	Twisted pair	Black
X1.50		Grey
X1.17	Twisted pair	Yellow
X1.51		Blue
X1.18	Twisted pair	White
X1.52		Blue
X1.19	Twisted pair	White
X1.53		Orange
X1.20	Twisted pair	White
X1.54		Green
X1.21	Twisted pair	White
X1.55		Brown
X1.22	Twisted pair	White
X1.56		Grey
X1.23	Twisted pair	Red
X1.57		Blue
X1.24	Twisted pair	Red
X1.58		Orange
X1.25	Twisted pair	Red

Pin of the Connector	Core Type	Color of Bare Wire
X1.59		Green
X1.26	Twisted pair	Red
X1.60		Brown
X1.27	Twisted pair	Red
X1.61		Grey
X1.28	Twisted pair	Black
X1.62		Blue
X1.29	Twisted pair	Black
X1.63		Orange
X1.30	Twisted pair	Black
X1.64		Green
X1.31	Twisted pair	Black
X1.65		Brown
X1.32	Twisted pair	Black
X1.66		Grey
X1.33	Twisted pair	Yellow
X1.67		Blue

Installation Positions

Table 5-35 describes installation positions of the Boolean value input cable.

Table 5-35 Installation positions of the Boolean value input cable

Cable Type	One End (MD68 Male Connector)	Other End (Bare Wire)
Boolean value input cable	Connecting to the SWIN port on the DMLC	The two twisted pairs at the bare end connect to the corresponding control devices.

5.5.10 EAC Signal Cable of the BTS3012

The EAC signal cable transmits the Boolean value alarm from the external devices to the BTS, helping the BTS known the status of the external devices and take relevant actions.

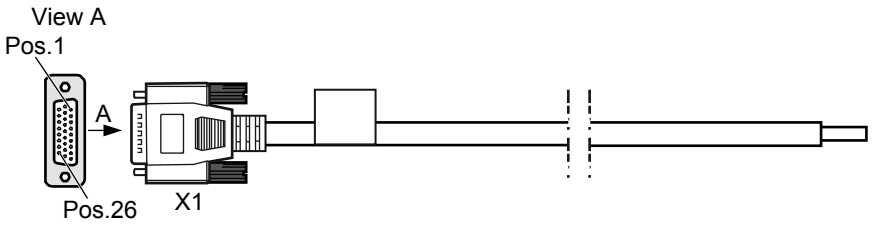
Function

The EAC signal cable transmits the status information of the external devices to the BTS, helping the BTS known the status of the external devices and take relevant actions.

Structure

Figure 5-24 shows the structure of the EAC signal cable.

Figure 5-24 Structure of the EAC-2 signal cable



(1) DB26 male connector (2) Bare wire

Pin Assignment

None.

Installation Positions

Table 5-36 describes the installation positions of the EAC signal cable.

Table 5-36 Installation positions of the EAC signal cable

Cable Type	One End (DB9 Male Connector)	Other End (Bare Wire)
EAC signal cable	Connecting to the EAC port on the DSAC	The two core wires at the bare wire end connect to the relevant control device.

5.5.11 Dedicated Monitoring Signal Cable of the BTS3012

The dedicated monitoring signal cable provides six dedicated monitoring signal inputs from the temperature sensor, humidity sensor, smoke sensor, water sensor, infrared sensor, and door sensor.

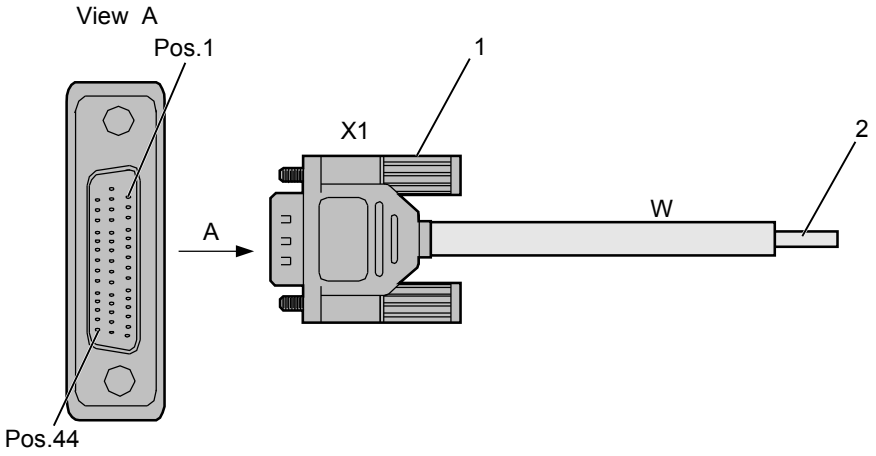
Function

The dedicated monitoring signal cable provides six dedicated monitoring signal inputs from the temperature sensor, humidity sensor, smoke sensor, water sensor, infrared sensor, and door sensor.

Structure

Figure 5-25 shows the structure of the dedicated monitoring signal cable.

Figure 5-25 Structure of the dedicated monitoring signal cable



(1) DB44 male connector (2) Bare wire

Pin Assignment

Table 5-37 describes the pin assignment for the dedicated monitoring signal cable.

Table 5-37 Pin assignment for the dedicated monitoring signal cable

Pin of the Connector	Core Type	Core Color	Signal Type
X1.1	Twisted pair	White	ANALOG4
X1.18		Blue	GRND
X1.16	Twisted pair	White	+12 V A1
X1.31		Orange	+12 V A1
X1.2	Twisted pair	White	ANALOG3
X1.33		Green	GRND
X1.17	Twisted pair	White	+12 V A1
X1.32		Brown	+12 V A1
X1.3	Twisted pair	White	ANALOG2
X1.34		Grey	GRND
X1.4	Twisted pair	Red	+12 V A1
X1.5		Blue	+12 V A1
X1.6	Twisted pair	Red	ANALOG1
X1.35		Orange	GRND
X1.19	Twisted pair	Red	+12 V A1

Pin of the Connector	Core Type	Core Color	Signal Type
X1.20		Green	+12 V A1
X1.7	Twisted pair	Red	Temp
X1.8		Brown	+12 V A1
X1.9	Twisted pair	Red	HUMI
X1.38		Grey	+12 V A1
X1.11	Twisted pair	Black	GATE
X1.26		Blue	GRND
X1.12	Twisted pair	Black	SMOKE
X1.13		Orange	SMOKE 24 V
X1.29	Twisted pair	Black	+12 V A1
X1.43		Green	+12 V A1
X1.14	Twisted pair	Black	DPTI
X1.28		Brown	GRND
X1.15	Twisted pair	Black	WATER
X1.27		Grey	GRND
X1.30	Twisted pair	Yellow	+12 V A1
X1.44		Blue	+12 V A1

Installation Positions

Table 5-38 describes the installation positions of the dedicated monitoring signal cable.

Table 5-38 Installation positions of the dedicated monitoring signal cable

Cable Type	One End (DB44 Male Connector)	Other End (Bare Wire)
Dedicated monitoring signal cable	Connecting to the AIN port on the DMLC	Connecting to the DDF

5.5.12 Environment Monitoring Signal Cable of the BTS3012

The environment monitoring signal cable transmits signals between the BTS and the environment monitoring device.

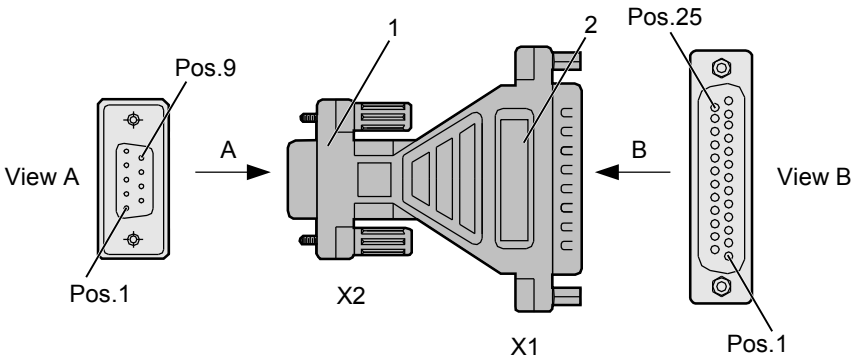
Function

The environment monitoring signal cable transmits signals between the BTS and the environment monitoring device.

Structure

The environment monitoring signal cable is only a converter. One end of the converter is a DB9 male connector and the other end is a DB25 female connector. See **Figure 5-26** for details.

Figure 5-26 Structure of the environment monitoring signal cable



(1) DB9 male connector (2) DB25 female connector

Pin Assignment

Table 5-39 describes the pin assignment for the environment monitoring signal cable.

Table 5-39 Pin assignment for the environment monitoring signal cable

Pin of the DB9 Connector	Core Type	Pin of the DB25 Female Connector
X2.1	Twisted pair	X1.12
X2.2		X1.13
X2.3	Twisted pair	X1.10
X2.4		X1.11
X2.5	Shielding layer	X1.9

Installation Positions

Table 5-40 describes the installation positions of the environment monitoring signal cable.

Table 5-40 Installation positions of the environment monitoring signal cable

Cable Type	One End (DB9 Male Connector)	Other End (DB25 Female Connector)
EMI signal cable	Connecting to the COM1 or COM2 port on the DSAC	Connecting to the environment monitoring device

5.5.13 RET Control Signal Cable of the BTS3012/BTS3012AE

The RET control signal cable transmits signals between the DATU and the Bias-Tee on the cabinet top.

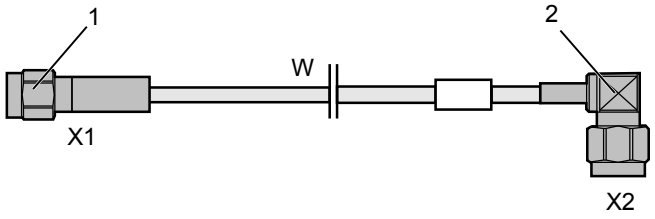
Function

The RET control signal cable transmits signals between the DATU and the Bias-Tee on the cabinet top.

Structure

Figure 5-27 shows the structure of the RET control signal cable.

Figure 5-27 Structure of the RET control signal cable



(1) SMA male connector (2) SMA elbow male connector

Pin Assignment

None.

Installation Positions

Table 5-41 describes the installation positions of the six coaxial cables. The installation positions are the same.

Table 5-41 Installation positions of the RET control signal cable

Cable Type	One End (SMA Male Connector)	Other End (SMA Elbow Male Connector)
RET control signal cable	Connecting to the SMA port on the Bias Tee	Connects to one ANT port on the DATU

5.5.14 Signal Cables Between the DCTB and the DAFU Subrack in the BTS3012

The signal cables between the DCTB and the DAFU subrack transmit signals between the cabinet top and DDPU/DCOM/DFCU in the DAFU subrack. The main signals include DAFU_FCLK signals, CBUS3 signals, in-position signals, and frequency detection signals.

Function

The signal cables between the DCTB and the DAFU subrack transmit signals between the cabinet top and DDPU/DCOM/DFCU in the DAFU subrack. The main signals include DAFU_FCLK signals, CBUS3 signals, in-position signals, and frequency detection signals.

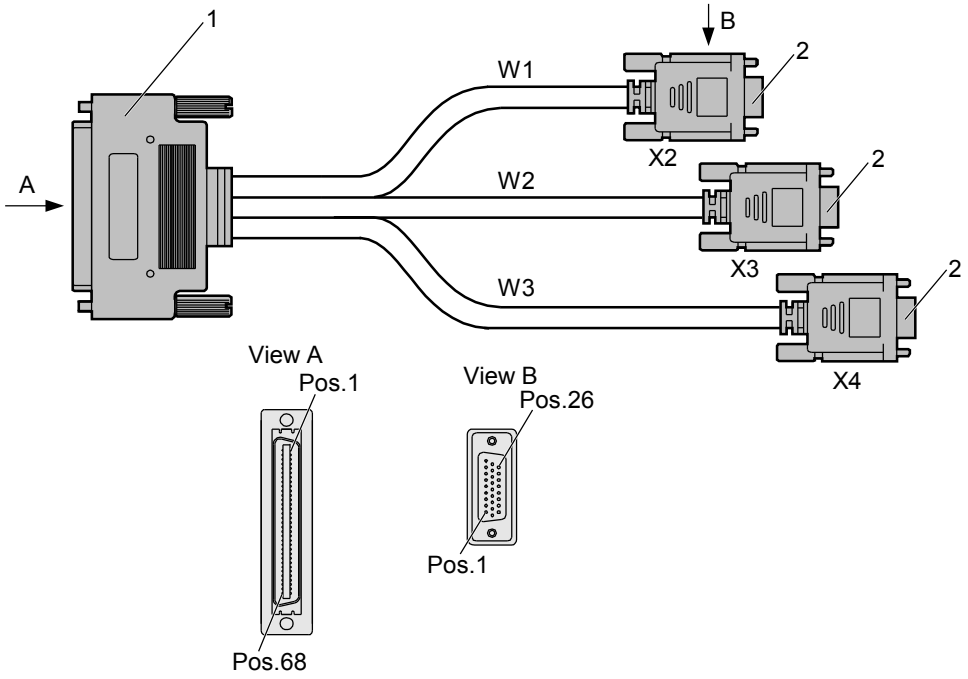
Structure

There are two signal cables between the DCTB and the DAFU subrack. The two cables are as follows:

- The signal cable between the DCTB and DAFU 0–DAFU 2
- The signal cable between the DCTB and DAFU 3–DAFU 5

The two cables have the same structure. **Figure 5-28** shows the structure of the cable.

Figure 5-28 Structure of the signal cable between the DCTB and the DAFU subrack



(1) MD68 male connector (2) DB26 male connector

Pin Assignment

The pin assignment of the two cables between the DCTB and the DAFU subrack are the same. **Table 5-42** describes the pin assignment for the signal cable between the DCTB and the DAFU subrack.

Table 5-42 Pins assignment for the signal cable between the DCTB and the DAFU subrack

Core Wire	Pin of the MD68 Connector	Pin of the DB26 Connector	Core Type
W1	X1.1	X2.7	Twisted pair
	X1.2	X2.8	
	X1.3	X2.11	Twisted pair
	X1.4	X2.10	
	X1.35	X2.20	Twisted pair
	X1.36	X2.19	
	X1.37	X2.13	Twisted pair
	X1.38	X2.12	
	X1.5	X2.16	Twisted pair
	X1.6	X2.9	
	X1.7	X2.17	Twisted pair
	X1.8	X2.18	
	X1.39	X2.15	Twisted pair
	X1.40	X2.24	
	X1.41	X2.26	Twisted pair
	X1.42	X2.25	
W2	X1.13	X3.7	Twisted pair
	X1.14	X3.8	
	X1.15	X3.11	Twisted pair
	X1.16	X3.10	
	X1.47	X3.20	Twisted pair
	X1.48	X3.19	
	X1.49	X3.13	Twisted pair
	X1.50	X3.12	
	X1.17	X3.9	Twisted pair
	X1.18	X3.16	
	X1.19	X3.17	Twisted pair
	X1.20	X3.18	
	X1.51	X3.15	Twisted pair

Core Wire	Pin of the MD68 Connector	Pin of the DB26 Connector	Core Type
	X1.52	X3.24	
	X1.53	X3.26	Twisted pair
	X1.54	X3.25	
W3	X1.25	X4.7	Twisted pair
	X1.26	X4.8	
	X1.27	X4.11	Twisted pair
	X1.28	X4.10	
	X1.59	X4.20	Twisted pair
	X1.60	X4.19	
	X1.61	X4.13	Twisted pair
	X1.62	X4.12	
	X1.29	X4.9	Twisted pair
	X1.30	X4.17	
	X1.31	X4.16	Twisted pair
	X1.32	X4.18	
	X1.63	X4.15	Twisted pair
	X1.64	X4.24	
	X1.65	X4.26	Twisted pair

Installation Positions

Table 5-43 describes the installation positions of the two signal cables between the DCTB and the DAFU subrack.

Table 5-43 Installation positions of the signal cables between the DCTB and the DAFU subrack

Signal Cable	One End (MD68 Male Connector)	Other End (Three DB26 Male Connectors)
Connecting DCTB to DAFU 0–DAFU 2	Connecting to the DCTB	Connecting to the COM/DBUS/ONSHELL ports on the DDPU/DFCU/DCOM in subrack DAFU 0
		Connecting to the COM/DBUS/ONSHELL ports on the DDPU/DFCU/DCOM in subrack DAFU 1

Signal Cable	One End (MD68 Male Connector)	Other End (Three DB26 Male Connectors)
		Connecting to the COM/DBUS/ONSHELL ports on the DDPU/DFCU/DCOM in subrack DAFU 2
Connecting DCTB to DAFU 3–DAFU 5	Connecting to the DCTB	Connecting to the COM/DBUS/ONSHELL ports on the DDPU/DFCU/DCOM in subrack DAFU 3
		Connecting to the COM/DBUS/ONSHELL ports on the DDPU/DFCU/DCOM in subrack DAFU 4
		Connecting to the COM/ONSHELL/DBUS ports on the DDPU/DCOM/DFCU in subrack DAFU 5

5.5.15 TOP Signal Cable Between the DCCU/DCSU and the DCTB of the BTS3012

The TOP signal cable between the DCCU/DCSU and the DCTB transmit signals between the DCCU/DCSU and the DCTB.

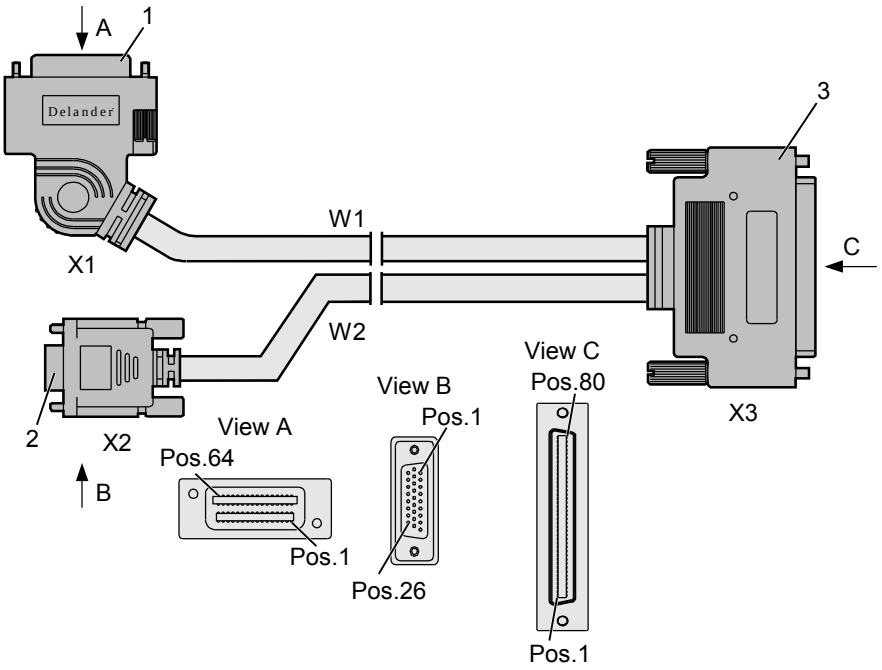
Function

The TOP signal cable between the DCCU/DCSU and the DCTB transmit signals between the DCCU/DCSU and the DCTB.

Structure

Figure 5-29 shows the structure of the TOP signal cable between the DCCU/DCSU and the DCTB.

Figure 5-29 Structure of the TOP signal cable between the DCCU/DCSU and the DCTB



(1) MD64 male connector (2) DB26 male connector (3) MD80 male connector

Pin Assignment

Table 5-44 describes the pin assignment of W1 in **Figure 5-29**.

Table 5-44 Pin assignment for W1

Pin of the MD64 Connector at the X1 End	Core Type	Pin of the MD80 Connector at the X3 End
X1.40	Twisted pair	X3.10
X1.39		X3.11
X1.35	Twisted pair	X3.12
X1.36		X3.13
X1.37	Twisted pair	X3.14
X1.38		X3.15
X1.11	Twisted pair	X3.16
X1.12		X3.17
X1.15	Twisted pair	X3.18
X1.16		X3.19
X1.3	Twisted pair	X3.20

Pin of the MD64 Connector at the X1 End	Core Type	Pin of the MD80 Connector at the X3 End
X1.4		X3.21
X1.7	Twisted pair	X3.22
X1.8		X3.23
X1.13	Twisted pair	X3.24
X1.14		X3.25
X1.30	Twisted pair	X3.26
X1.29		X3.27
X1.5	Twisted pair	X3.28
X1.6		X3.29
X1.9	Twisted pair	X3.30
X1.10		X3.31
X1.23	Twisted pair	X3.32
X1.24		X3.33
X1.27	Twisted pair	X3.34
X1.28		X3.35
X1.19	Twisted pair	X3.36
X1.20		X3.37
X1.21	Twisted pair	X3.38
X1.22		X3.39
X1.56	Twisted pair	X3.40
X1.55		X3.80
X1.42	Twisted pair	X3.49
X1.26		X3.50
X1.58	Twisted pair	X3.52
X1.57		X3.53
X1.60	Twisted pair	X3.54
X1.59		X3.55
X1.54	Twisted pair	X3.56
X1.53		X3.57

Pin of the MD64 Connector at the X1 End	Core Type	Pin of the MD80 Connector at the X3 End
X1.49	Twisted pair	X3.58
X1.50		X3.59
X1.44	Twisted pair	X3.60
X1.43		X3.61
X1.64	Twisted pair	X3.62
X1.63		X3.63
X1.52	Twisted pair	X3.64
X1.51		X3.65
X1.33	Twisted pair	X3.66
X1.34		X3.67
X1.32	Twisted pair	X3.68
X1.31		X3.69
X1.48	Twisted pair	X3.70
X1.47		X3.71
X1.17	Twisted pair	X3.72
X1.18		X3.73

Table 5-45 describes the pins of W2 in **Figure 5-29**.

Table 5-45 Pins of W2

Pin at the X2 End (DB26 Connector)	Core Type	Pin of the MD80 Connector at the X3 End
X2.6	Twisted pair	X3.1
X2.5		X3.41
X2.16	Twisted pair	X3.2
X2.17		X3.42
X2.15	Twisted pair	X3.3
X2.12		X3.43
X2.14	Twisted pair	X3.4
X2.11		X3.44

Pin at the X2 End (DB26 Connector)	Core Type	Pin of the MD80 Connector at the X3 End
X2.13	Twisted pair	X3.5
X2.10		X3.45
X2.9	Twisted pair	X3.6
X2.8		X3.46
X2.2	Twisted pair	X3.7
X2.3		X3.47
X2.4	Twisted pair	X3.8
X2.1		X3.48

Installation Positions

Table 5-46 describes the installation positions of the signal cable between the DCCU/DCSU and the DCTB TOP.

Table 5-46 Installation positions of the signal cable between the DCCU/DCSU and the DCTB TOP

Cable Type	One End	Other End (MD80 Male Connector)
Signal cable Between the DCCU/DCSU and the DCTB TOP	The MD64 male connector connects to the TO_TOP1 port on the DCCU.	Connecting to the MD80 port on the DCTB
	The DB26 male connector connects to the TOP2 port on the DCSU.	

NOTE

The MD80 is invisible as it is at the back of the DCTB.

5.5.16 Signal Cable between the DCSU and the DTRB in the BTS3012/BTS3012AE

The signal cable between the DCSU and the DTRB transmit signals between the DTRU and the DCSU. The signals include data bus signals, clock bus signals, CBUS2 signals, and in-position signals.

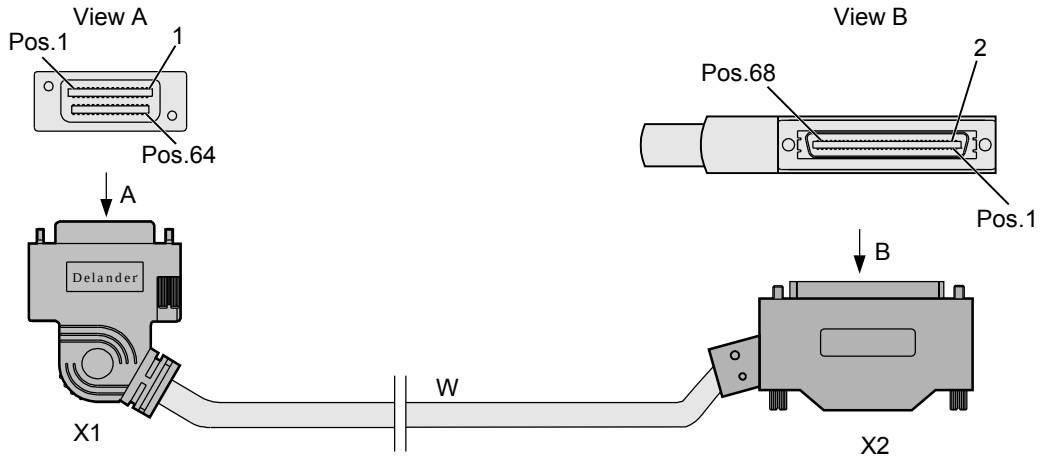
Function

The signal cable between the DCSU and the DTRB transmit signals between the DTRU and the DCSU. The signals include data bus signals, clock bus signals, CBUS2 signals, and in-position signals.

Structure

Figure 5-30 shows the structure of the signal cable between the DCSU and the DTRB.

Figure 5-30 Structure of the signal cable between the DCSU and the DTRB



(1) MD64 male connector (2) MD68 male connector

Pin Assignment

Table 5-47 describes the pin assignment for the signal cable between the DCSU and the DTRB.

Table 5-47 Pin assignment for the signal cable between the DCSU and the DTRB

Cable	Pin of the MD64 Connector at the X1 End	Pin of the MD68 Connector at the X2 End	Core Type
W	X1.1	X2.1	Twisted pair
	X1.2	X2.2	
	X1.3	X2.35	Twisted pair
	X1.4	X2.36	
	X1.5	X2.3	Twisted pair
	X1.6	X2.46	
	X1.7	X2.4	Twisted pair
	X1.8	X2.5	
	X1.9	X2.38	Twisted pair
	X1.10	X2.39	
	X1.11	X2.6	Twisted pair
	X1.12	X2.40	

Cable	Pin of the MD64 Connector at the X1 End	Pin of the MD68 Connector at the X2 End	Core Type
	X1.13	X2.7	Twisted pair
	X1.14	X2.8	
	X1.15	X2.41	Twisted pair
	X1.16	X2.42	
	X1.17	X2.10	Twisted pair
	X1.18	X2.11	
	X1.19	X2.44	Twisted pair
	X1.20	X2.45	
	X1.21	X2.21	Twisted pair
	X1.22	X2.26	
	X1.23	X2.13	Twisted pair
	X1.24	X2.14	
	X1.25	X2.47	Twisted pair
	X1.26	X2.48	
	X1.27	X2.55	Twisted pair
	X1.28	X2.60	
	X1.29	X2.16	Twisted pair
	X1.30	X2.17	
	X1.31	X2.50	Twisted pair
	X1.32	X2.51	
	X1.33	X2.19	Twisted pair
	X1.34	X2.20	
	X1.35	X2.53	Twisted pair
	X1.36	X2.54	
	X1.37	X2.18	Twisted pair
	X1.38	X2.52	
	X1.39	X2.22	Twisted pair
	X1.40	X2.23	
	X1.41	X2.25	Twisted pair

Cable	Pin of the MD64 Connector at the X1 End	Pin of the MD68 Connector at the X2 End	Core Type
	X1.42	X2.59	
	X1.43	X2.37	Twisted pair
	X1.44	X2.49	
	X1.45	X2.27	Twisted pair
	X1.46	X2.28	
	X1.47	X2.61	Twisted pair
	X1.48	X2.62	
	X1.49	X2.30	Twisted pair
	X1.50	X2.31	
	X1.51	X2.64	Twisted pair
	X1.52	X2.65	
	X1.55	X2.58	Twisted pair
	X1.56	X2.56	
	X1.57	X2.24	Twisted pair
	X1.58	X2.57	
	X1.59	X2.32	Twisted pair
	X1.60	X2.66	
	X1.61	X2.33	Twisted pair
	X1.62	X2.34	
	X1.63	X2.67	Twisted pair
	X1.64	X2.68	
	X1.53	X2.63	Twisted pair

Installation Positions

Table 5-48 describes the installation positions of the signal cable between the DCSU and the DTRB.

Table 5-48 Installation positions of the signal cable between the DCSU and the DTRB

Cable	One End (MD64 Male Connector)	Other End (MD68 Male Connector)
Signal cable between the DCSU and the DTRB	Connecting to port TO_DTRB on the DCSU	Connecting to port MD68 on the DTRB

5.5.17 Boolean Value Signal Transfer Cable of the BTS3012

The Boolean value signal transfer cable transfers Boolean value signals and analog signals inside the cabinet. It also transfers the external Boolean value signals from the DCTB.

Function

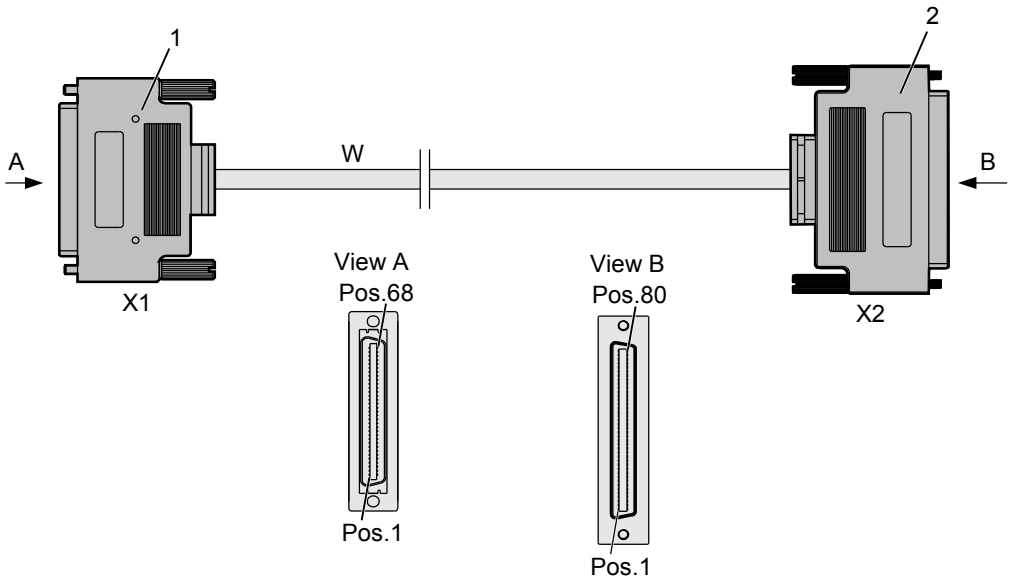
The Boolean value signal transfer cable performs the following functions:

- Transferring Boolean value signals and analog signals inside the cabinet
- Transferring external Boolean value input signals and output signals from DCTB to the DEMU through the DCSU

Structure

Figure 5-31 shows the structure of the Boolean value signal transfer cable.

Figure 5-31 Structure of the Boolean value signal transfer cable



(1) MD68 male connector (2) MD80 male connector

Pin Assignment

Table 5-49 describes the pin assignment for the Boolean value signal transfer cable.

Table 5-49 Pin assignment for the Boolean value signal transfer cable

Pin of the MD68 Connector at the X1 End	Core Type	Pin of the MD80 Connector at the X2 End
X1.23	Twisted pair	X2.9
X1.24		X2.10
X1.25	Twisted pair	X2.11
X1.56		X2.12
X1.64	Twisted pair	X2.13
X1.63		X2.14
X1.30	Twisted pair	X2.15
X1.31		X2.16
X1.5	Twisted pair	X2.17
X1.68		X2.18
X1.32	Twisted pair	X2.19
X1.36		X2.20
X1.60	Twisted pair	X2.21
X1.4		X2.22
X1.1	Twisted pair	X2.23
X1.58		X2.24
X1.2	Twisted pair	X2.25
X1.53		X2.26
X1.49	Twisted pair	X2.27
X1.22		X2.28
X1.21	Twisted pair	X2.29
X1.17		X2.30
X1.16	Twisted pair	X2.31
X1.14		X2.32
X1.46	Twisted pair	X2.33
X1.45		X2.34
X1.41	Twisted pair	X2.35
X1.40		X2.36

Pin of the MD68 Connector at the X1 End	Core Type	Pin of the MD80 Connector at the X2 End
X1.13	Twisted pair	X2.37
X1.9		X2.38
X1.8	Twisted pair	X2.39
X1.7		X2.40
X1.26	Twisted pair	X2.49
X1.28		X2.50
X1.38	Twisted pair	X2.51
X1.54		X2.52
X1.55	Twisted pair	X2.53
X1.27		X2.54
X1.65	Twisted pair	X2.55
X1.29		X2.56
X1.67	Twisted pair	X2.57
X1.66		X2.58
X1.33	Twisted pair	X2.59
X1.34		X2.60
X1.3	Twisted pair	X2.61
X1.35		X2.62
X1.59	Twisted pair	X2.63
X1.48		X2.64
X1.61	Twisted pair	X2.65
X1.52		X2.66
X1.51	Twisted pair	X2.67
X1.50		X2.68
X1.20	Twisted pair	X2.69
X1.19		X2.70
X1.18	Twisted pair	X2.71
X1.47		X2.72
X1.15	Twisted pair	X2.73

Pin of the MD68 Connector at the X1 End	Core Type	Pin of the MD80 Connector at the X2 End
X1.44		X2.74
X1.43	Twisted pair	X2.75
X1.42		X2.76

Installation Positions

Table 5-50 describes installation positions of the Boolean value signal transfer cable.

Table 5-50 Installation positions of the Boolean value signal transfer cable

Cable	One End (MD64 Male Connector)	Other End (MD68 Male Connector)
Signal cable between the DCSU and the DTRB	Connecting to port TO_DTRB on the DCSU	Connecting to port MD68 on the DTRB

5.5.18 FAN Subrack Signal Transfer Cable of the BTS3012

The FAN subrack signal transfer cable transfers the information of the FAN Box to the DCCU.

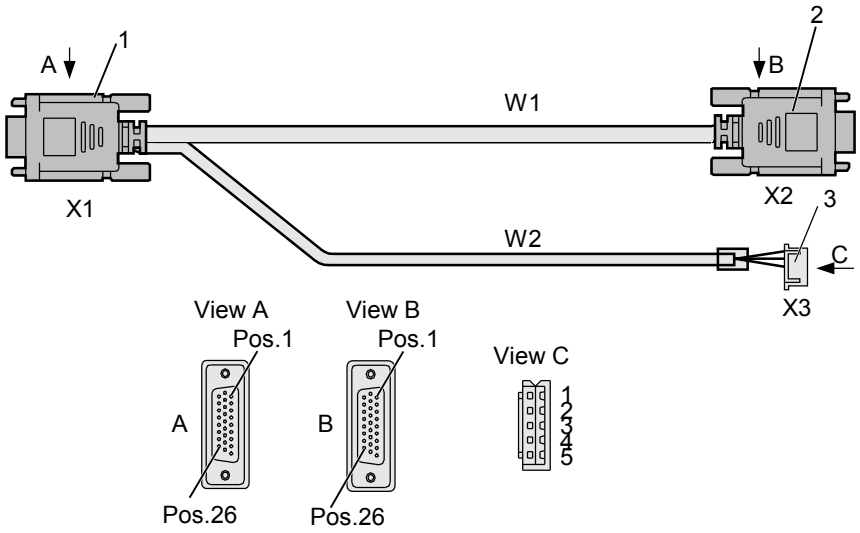
Function

The FAN subrack signal transfer cable transfers the information of the FAN Box to the DCCU.

Structure

Figure 5-32 shows the structure of the FAN subrack signal transfer cable.

Figure 5-32 Structure of the FAN subrack signal transfer cable



(1) DB26 male connector (2) DB26 male connector (3) common 5-pin connector

Pin Assignment

Table 5-51 describes the pin assignment for W1 in **Figure 5-32**.

Table 5-51 Pin assignment for W1

Pin at the X1 End (DB26 Connector)	Core Type	Pin at the X2 End (DB26 Connector)
X1.1	Twisted pair	X2.1
X1.10		X2.10
X1.2	Twisted pair	X2.2
X1.3		X2.3
X1.4	Twisted pair	X2.4
X1.5		X2.5
X1.6	Twisted pair	X2.6
X1.7		X2.7
X1.11	Twisted pair	X2.11
X1.19		X2.19
X1.13	Twisted pair	X2.13
X1.14		X2.14
X1.15	Twisted pair	X2.15
X1.16		X2.16

Pin at the X1 End (DB26 Connector)	Core Type	Pin at the X2 End (DB26 Connector)
X1.17	Twisted pair	X2.17
X1.12		X2.12
X1.20	Twisted pair	X2.20
X1.21		X2.21
X1.22	Twisted pair	X2.22
X1.23		X2.23
X1.24	Twisted pair	X2.24
X1.25		X2.25
X1.26	-	X2.26

Table 5-52 describes the pins of W2 in **Figure 5-32**.

Table 5-52 Pins of W2

Pin of the DB26 Connector at the X1 End	Wire Type	Pin of the 5-Pin Connector at the X3 End
X1.8	Twisted pair	X3.1
X1.9		X3.2
X1.18	-	X3.3

Installation Positions

Table 5-53 describes the installation positions of the FAN subrack signal transfer cable.

Table 5-53 Installation positions of the FAN subrack signal transfer cable

Cable Type	One End (DB26 Male Connector)	Other End
FAN subrack signal transfer cable	Connecting to port To_FAN on the DCCU	The DB26 male connector connects to the COM port on the FAN Box.
		The 5-pin connector connects to the sensor port at the air inlet at the bottom of the cabinet.

5.5.19 Diversity Receive Short-Circuiting Cable of the BTS3012/ BTS3012AE

The diversity receive short-circuiting cables are used to transfer the diversity receive signals from the antenna subsystem when the DFCU is used.

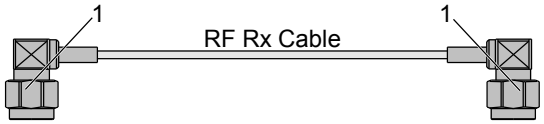
Function

The diversity receive short-circuiting cables are used to transfer the diversity receive signals from the antenna subsystem when the DFCU is used.

Structure

Figure 5-33 shows the structure of the diversity receive short-circuiting cable.

Figure 5-33 Structure of the diversity receive short-circuiting cable



(1) SMA elbow male connector

Pin Assignment

None.

Installation Positions

Table 5-54 describes the installation positions of the diversity receive short-circuiting cable.

Table 5-54 Installation positions of the diversity receive short-circuiting cable

Cable Type	One End	Other End
Diversity receive short-circuiting cable	Connecting to the RXD-OUT port on the DFCU panel	Connecting to the HL-IN port on the DFCU panel

5.5.20 Four-In-One Short-Circuiting Cable of the BTS3012/ BTS3012AE

The four-in-one short-circuiting cable outputs four routes of combined signals when the DFCU or DFCB is used. When the DFCU and the DFCB is cascaded, six routes of combined signals can be obtained.

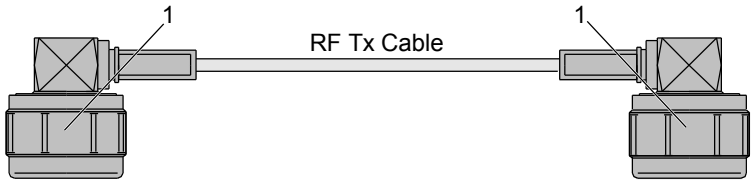
Function

The four-in-one short-circuiting cable outputs four routes of combined signals when the DFCU or DFCB is used. When the DFCU and the DFCB is cascaded, six routes of combined signals can be obtained.

Structure

Figure 5-34 shows the structure of the four-in-one short-circuiting cable.

Figure 5-34 Structure of the four-in-one short-circuiting cable



(1) N elbow male connector

Pin Assignment

None.

Installation Positions

Table 5-55 describes the installation positions of the four-in-one short-circuiting cable.

Table 5-55 Installation positions of the four-in-one short-circuiting cable

Type	One End	Other End
Four-in-one short-circuiting cable	Connecting to the TX-COM port on the DFCU panel	Connecting to the TX-DUP port on the DFCU panel
	Connecting to the COM1 or COM2 port on the DFCB panel	Connecting to the TX-DUP port on the DFCB panel

5.5.21 Signal Cable Between the DFCB and the DFCU in the BTS3012/BTS3012AE

The signal cable between the DFCB and the DFCU transmits one route of combined RF signals (two-in-one) to the DFCU so that the DFCU can combine six routes of RF signals into one route for transmission.

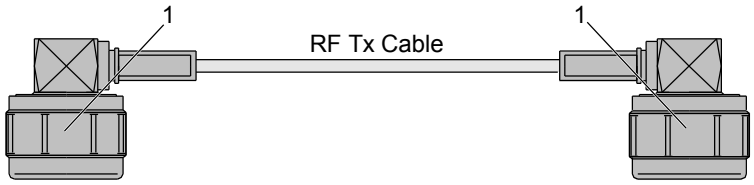
Function

The signal cable between the DFCB and the DFCU transmits one route of combined RF signals (two-in-one) to the DFCU so that the DFCU can combine six routes of RF signals into one route for transmission.

Structure

Figure 5-35 shows the structure of the signal cable between the DFCB and the DFCU.

Figure 5-35 Strucute of the signal cable between the DFCB and the DFCU



(1) N elbow male connector

Pin Assignment

None.

Installation Positions

Table 5-56 describes the installation positions of the signal cable between the DFCB and the DFCU.

Table 5-56 Installation positions of the signal cable between the DFCB and the DFCU

Type	One End	Other End
Signal cable between the DFCB and the DFCU	Connecting to the COM-IN port on the DFCU panel	Connecting to the COM1 or COM2 port on the DFCB panel

5.5.22 Signal Transfer Cable Between BTS3012 Combined Cabinets

The signal transfer cable between combined cabinets connects the DCTB with the DCSU. It not only transmits clock signals, control signals, and data signals between the main cabinet and the extension cabinet, but also transmits Boolean value alarm signals.

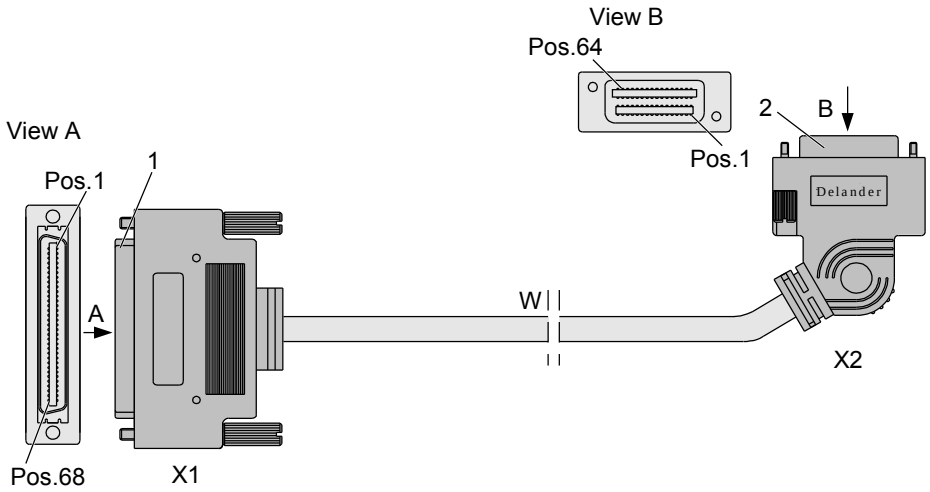
Function

The signal transfer cable between combined cabinets not only transmits clock signals, control signals, and data signals between the main cabinet and the extension cabinet, but also transmits Boolean value alarm signals from the DMLC.

Structure

Figure 5-36 shows the structure of the signal transfer cable between combined cabinets.

Figure 5-36 Structure of the signal transfer cable between combined cabinets



(1) MD68 male connector (2) MD64 male connector

Pin Assignment

Table 5-57 describes the pin assignment for the signal transfer cable between combined cabinets.

Table 5-57 Pin assignment for the signal transfer cable between combined cabinets

Core Wire	Pin at the X1 End (MD68 Connector)	Pin at the X2 End (MD64 Connector)	Core Type
W	X1.13	X2.32	Twisted pair
	X1.14	X2.31	
	X1.15	X2.30	Twisted pair
	X1.16	X2.29	
	X1.17	X2.16	Twisted pair
	X1.18	X2.15	
	X1.19	X2.14	Twisted pair
	X1.20	X2.13	
	X1.21	X2.40	Twisted pair
	X1.22	X2.39	
	X1.23	X2. 36	Twisted pair
	X1.24	X2.35	
	X1.25	X2.34	Twisted pair
	X1.26	X2.33	

Core Wire	Pin at the X1 End (MD68 Connector)	Pin at the X2 End (MD64 Connector)	Core Type
	X1.27	X2.58	Twisted pair
	X1.28	X2.57	
	X1.29	X2.56	Twisted pair
	X1.30	X2.55	
	X1.31	X2.4	Twisted pair
	X1.32	X2.3	
	X1.33	X2.2	Twisted pair
	X1.34	X2.1	
	X1.45	X2.52	Twisted pair
	X1.46	X2.51	
	X1.47	X2.50	Twisted pair
	X1.48	X2.49	
	X1.49	X2.64	Twisted pair
	X1.50	X2.63	
	X1.51	X2.62	Twisted pair
	X1.52	X2.61	
	X1.53	X2.48	Twisted pair
	X1.54	X2.47	
	X1.55	X2.46	Twisted pair
	X1.56	X2.45	
	X1.57	X2.26	Twisted pair
	X1.58	X2.25	
	X1.59	X2.24	Twisted pair
	X1.60	X2.23	
	X1.61	X2.20	Twisted pair
	X1.62	X2.19	
	X1.63	X2.18	Twisted pair
	X1.64	X2.17	
	X1.65	X2.10	Twisted pair

Core Wire	Pin at the X1 End (MD68 Connector)	Pin at the X2 End (MD64 Connector)	Core Type
	X1.66	X2.9	
	X1.67	X2.8	Twisted pair
	X1.68	X2.7	
	X1.6	X2.5	-
	X1.7	X2.6	-
	X1.8	X2.11	-
	X1.9	X2.12	-
	X1.5	X2.21	Shield
	X1.10	X2.22	
	X1.39	X2.27	
	X1.40	X2.28	
	X1.41	X2.59	
	X1.44	X2.60	
	X1.Shell	X2.Shell	

Installation Positions

Table 5-58 describes the installation positions of the signal transfer cable between combined cabinets.

Table 5-58 Installation positions of the signal transfer cable between combined cabinets

Signal Cable	One End (MD68 Male Connector)	Other End (MD64 Male Connector)
Combined cabinet Signal connection Unit for DTRU BTS	Connecting to port TO SLAVE–MASTER (FROM DCSU) on the DCTB	Connecting to CC_IN port on the DCSU in one single cabinet or cabinet groups
		Connecting to the CC_OUT port on the DCSU of the main cabinet and to the CC_IN port on the DCSU of the extension cabinet when the combined cabinets are used

NOTE

The TO SLAVE–MASTER (FROM DCSU) port is invisible because it is on the back of the DCTB.

5.6 RF Cables of the BTS3012

The RF cables of the BTS3012 include BTS3012 RF signal cable and BTS3012 indoor 1/2-inch RF jumper.

5.6.1 RF Signal Cables of the BTS3012/BTS3012AE
The RF signal cables include RF RX signal cable and RF TX signal cable.

5.6.2 Indoor 1/2-Inch Jumper of the BTS3012
The indoor 1/2-inch jumper transmits signals between the BTS and the antenna system by connecting one end of the jumper to the ANT port on the DDPU/DFCU and connecting the other end of the jumper to the feeder through a feeder connector.

5.6.1 RF Signal Cables of the BTS3012/BTS3012AE

The RF signal cables include RF RX signal cable and RF TX signal cable.

Function

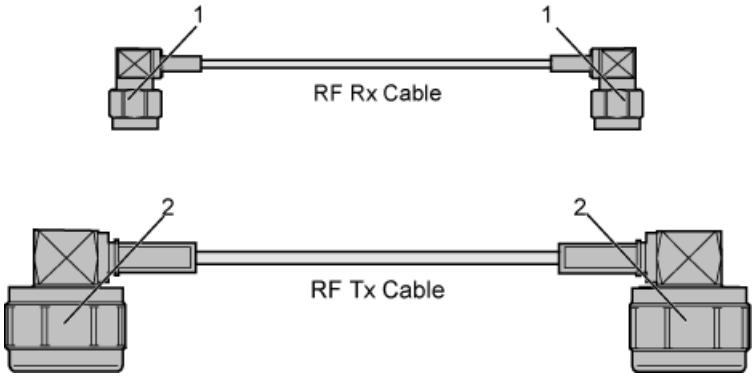
The RF signal cables include RF RX signal cable and RF TX signal cable.

- The RF RX signal cable connects the RX ports on the DDPU/DFCU and the DTRU and transmits UL signals.
- The RF TX signal cable connects the TX ports on the DDPU/DFCU and the DTRU and transmits DL signals.

Structure

Figure 5-37 shows the structure of the RF RX signal cable and the RF TX signal cable.

Figure 5-37 Structure of the RF RX signal cable and the RF TX signal cable



(1) SMA elbow male connector (2) N elbow male connector

Pin Assignment

None.

Installation Positions

Table 5-59 describes the installation positions of the RF signal cables.

Table 5-59 Installation positions of the RF signal cables

Cable	One End	Other End
RF TX cable	Connecting to the TX port on the DTRU	Connecting to the TX port on the DDPU/DFCU
RF RX cable	Connecting to the RX port on the DTRU	Connecting to the RX port on the DDPU/DFCU

NOTE

In inter-cabinet cell configuration, the RF RX cables should be connected between two cabinets. The BTS3012 cabinet uses two 2.8 m long RF RX cables to set up the connection between two cabinet. Both ends of the RF RX cable use SMA coaxial connectors.

5.6.2 Indoor 1/2-Inch Jumper of the BTS3012

The indoor 1/2-inch jumper transmits signals between the BTS and the antenna system by connecting one end of the jumper to the ANT port on the DDPU/DFCU and connecting the other end of the jumper to the feeder through a feeder connector.

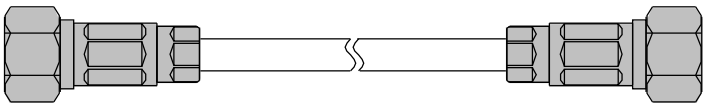
Function

The indoor 1/2-inch jumper transmits signals between the BTS and the antenna system by connecting one end of the jumper to the ANT port on the DDPU/DFCU and connecting the other end of the jumper to the feeder through a feeder connector.

Structure

Both ends of the 1/2-inch jumper are of DIN connectors, which should be made on site. For the method of making DIN connectors, refer to the instruction guide in the connector bag. **Figure 5-38** shows the structure of the jumper.

Figure 5-38 Structure of the indoor 1/2-inch jumper



Pin Assignment

None.

Installation Positions

Table 5-60 describes the installation positions of the indoor 1/2-inch jumper.

Table 5-60 Installation positions of the indoor 1/2-inch jumper

Cable Type	One End (DIN Male Connector)	One End (DIN Male Connector)
Indoor 1/2-inch jumper	Connecting to port ANTA or ANTB on the top of the DDPU/ DFCU	Connecting to the feeder of the antenna system

5.7 Signal Cable Between the BTS3012 and the Auxiliary Equipment

5.7.1 Signal Cable for the External Environment Alarm Box of the BTS3012/BTS3012AE/ BTS3006C
The external environment alarm box transmits the alarm signals to the BTS, helping the BTS take relevant actions.

5.7.2 Power Cable Between the Sidepower and the BTS3012
The power cable between the Sidepower and the BTS3012 transmits the –48 V DC from the Sidepower to the BTS3012 cabinet.

5.7.3 Alarm Signal Cable Between the Sidepower and the BTS3012
The alarm signal cable between the Sidepower and the BTS3012 sends the alarm signals of the Sidepower to the BTS, helping the BTS to take relevant actions.

5.7.1 Signal Cable for the External Environment Alarm Box of the BTS3012/BTS3012AE/BTS3006C

The external environment alarm box transmits the alarm signals to the BTS, helping the BTS take relevant actions.

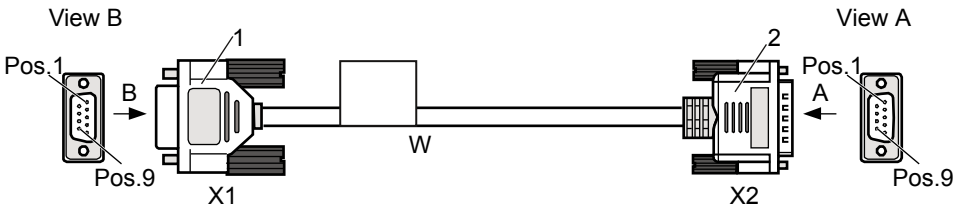
Function

The external environment alarm box transmits the alarm signals to the BTS, helping the BTS take relevant actions.

Structure

Figure 5-39 shows the structure of the signal cable for the external environment alarm box.

Figure 5-39 Structure of the signal cable for the external environment alarm box



(1) DB9 male connector (2) DB9 male connector

Pin Assignment

None.

Installation Positions

Table 5-61 shows the installation positions of the signal cable for the external environment alarm box.

Table 5-61 Installation positions of the signal cable for the external environment alarm box

Cable Type	One End (DB9 Male Connector)	Other End (DB9 Male Connector)
Signal cable for the external environment alarm box	Connecting to the COM1 or COM2 port on the DSAC	The two core wires at the bare wire end connect to the relevant control device.

5.7.2 Power Cable Between the Sidepower and the BTS3012

The power cable between the Sidepower and the BTS3012 transmits the –48 V DC from the Sidepower to the BTS3012 cabinet.

Function

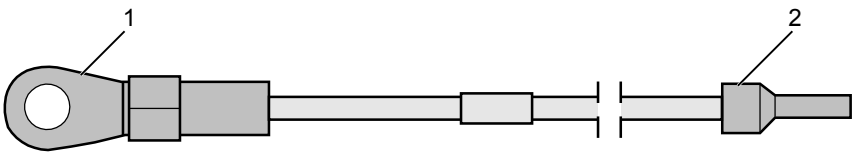
The power cable between the Sidepower and the BTS3012 transmits the –48 V DC from the Sidepower to the BTS3012 cabinet.

Structure

There are two power cables between the Sidepower and the BTS3012. One cable is a –48 V DC power cable while the other cable is a grounding cable. The blue –48 V DC power cable has a sectional area of 16 ^{2}. The black grounding cable also has a sectional area of 16 mm^2. Both power cables use an OT terminal at one end and a core end terminal at the other end. Both of the OT terminal and core end terminal should be made on site.

Figure 5-40 shows the structure of the power cable between the Sidepower and the BTS3012.

Figure 5-40 Structure of the power cable between the Sidepower and the BTS3012



(1) OT terminal (2) Cord end terminal

Pin Assignment

None.

Installation Positions

Table 5-62 describes the installation positions of the power cable between the Sidepower and the BTS3012.

Table 5-62 Installation positions of the power cable between the Sidepower and the BTS3012

Signal Cable	One End (OT Terminal)	Other End (Cord End Connector)
Power cable between the Sidepower and the BTS3012	The –48 V DC power cable connects to the negative copper bar on the Sidepower.	The –48 V DC power cable connects to the -48 V terminal on the top of the BTS3012 cabinet.
	The grounding cable connects to the positive copper bar on the Sidepower.	The grounding cable connects to the GND terminal on the top of the BTS3012 cabinet.

5.7.3 Alarm Signal Cable Between the Sidepower and the BTS3012

The alarm signal cable between the Sidepower and the BTS3012 sends the alarm signals of the Sidepower to the BTS, helping the BTS to take relevant actions.

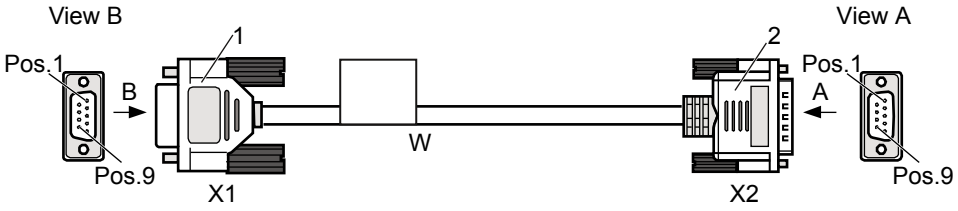
Function

The alarm signal cable between the Sidepower and the BTS3012 sends the alarm signals of the Sidepower to the BTS, helping the BTS to take relevant actions.

Structure

Figure 5-41 shows the structure of the alarm signal cable between the Sidepower and the BTS3012.

Figure 5-41 Structure of the alarm signal cable between the Sidepower and the BTS3012



(1) DB9 male connector (2) DB9 male connector

Pin Assignment

Table 5-63 describes the pin assignment for the alarm signal cable between the Sidepower and the BTS3012.

Table 5-63 Pin assignment for the alarm signal cable between the Sidepower and the BTS3012

Core Wire	X1 End	X2 End
W	X1.2	X2.4
	X1.3	X2.10
	X1.4	X2.1
	X1.5	X2.2
	X1.6	X2.3

Installation Positions

Table 5-64 describes the installation positions of the alarm signal cable between the Sidepower and the BTS3012.

Table 5-64 Installation positions of the alarm signal cable between the Sidepower and the BTS3012

Cable Type	One End (DB9 Male Connector)	Other End (DB9 Male Connector)
Alarm Signal cable between the Sidepower and the BTS3012	Connecting to the EAC port on the DSAC	Connecting to the DB9 port on the alarm board of the Sidepower