SAMSUNG

UTP Power Supply Hub **SPU-400** User Guide

Before installing and operating this product,
please read this manual thoroughly.

ENGLISH

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Thank you for purchasing a Samsung Techwin product. Before attempting to connect or operate this product, please read this instruction book carefully and save it for future use. If you find this manual too difficult to understand, or experience problems with installing or using it, please contact our service center or sales department for assistance.

Cautions for Installation

Before installing this product, please read the following cautions and warnings carefully.

Do not install the product in the following locations.

■ **Places under extremely high or low temperature conditions.**
   Use this product under temperature conditions only between -10° and +50° to prevent low performance and product malfunctions.

■ **Places exposed to rain, snow, or high humidity.**
   Avoid water and moisture leakage into the product; it may cause the product to malfunction.

■ **Places containing or exposed to oil and gas.**
   Oil, moisture, and gas leakage into the product may cause product malfunctions.

■ **Places exposed to vibration and shock.**
   Vibration and shock may cause product malfunctions.

■ **Places under direct sunlight or exposed to outdoor weather conditions.**
   Direct sunlight and severe weather conditions may cause product malfunctions.

■ **Places exposed to radio waves (RF) or near power cables.**
   Radio communication devices and electromagnetic waves from power lines may cause product malfunctions.

Cautions for Use

■ **Do not disassemble the product or allow foreign objects to get into the product.**
   Disassembly of the product or insertion of foreign objects such as metal may break or damage the unit.

■ **Make sure to turn off the product prior to installation.**
   Before installing your product, please check its voltage rating and then turn on the power switch.

■ **Do not subject the product to physical shock or exert excessive force to operate the product.**
   Shocks and excessive force on the components such as circuits may break or seriously damage the unit.

1. Product Introduction

1-1. Overview

The SPU-400 UTP power supply can be used both to transfer power to the AC 24V UTP cameras(SUB-2000 and SUD-2080/2080F) and transmit up to 4 video signals—from a camera or the SPU-100TR UTP transceiver to a receiver—via TP (UTP, STP, FTP) cable. It also provides an RS-485 data port.

Transfers power to a camera only up to 400m.(This product is compatible with our 2 models of UTP-integrated cameras, the SPU-100TR, and the NVT and NITEK products. The maximum power transfer distance may vary depending on the voltage rating of the cameras and the type of cables.)

1-2. Product Features

· Transfers power up to 400 m via CAT.5 UTP cable (Max. 1A)
· Equipped with an AC 24/28 V switch to adjust the power supply distance to the location of the camera.
  - 300m or Shorter : AC 24 V
  - 300~400m : AC 28 V
· Automatically shuts down when the UTP cable becomes shorted out from a close distance
· UTP Cable Status LED
  - OFF : No load
  - Green : Normal
  - Amber : Overload
  - Red : Shorted
· RS-485 data port for controlling camera
· Lightning surge protection

2. Package Contents
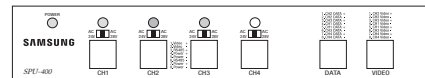

❶ SPU-400   ❷ User Guide   ❸ 19" Rack Mount

3. Product Parts and Peripheral Device Connection
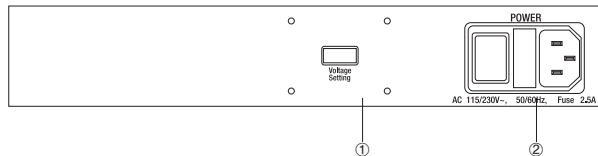
3-1. Part Names and Functions

3-1-1. Front

① Power ON Status LED
② UTP Cable Status LED
  - OFF : No load
  - Green : Normal
  - Amber : Overload
  - Red : Shorted

③ AC 24/28 V Switch
  - AC 24 V : For a 300 m or shorter UTP cable
  - AC 28 V : For a 300 to 400 m UTP cable
   ※ The recommended distance is based on CAT.5 UTP cable. Depending on the type and model of UTP cables and cameras, the power supply distance may vary.
④ Camera UTP Cable Terminal : Receives video signals and transfers power to a camera.
⑤ RS-485 Data Port
⑥ Receiver-Side : 4 video signal output ports
※ Recommended Cameras : The SUB-2000 and SUD-2080/2080F

3-1-2. Back

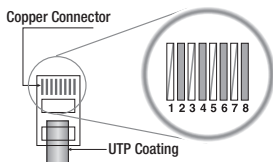① AC Input Power Switch   ② AC Inlet
  - AC 115 V / AC 230 V

3. Product Parts and Peripheral Device Connection

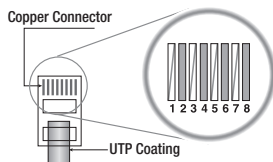## 3-2. Installing the SPU-400 and Connecting UTP Cable

3-2-1. Camera-Side UTP Cable

① Connect an RJ-45 Plug to a camera UTP cable.
  ● The following pin alignment complies with the communication cable standards and is provided for your convenient installation.

Copper Connector

1 2 3 4 5 6 7 8

UTP Coating

① Connect the RJ-45 plugs to the CH1 to 4 ports on the SPU-400.
② Connect RS-485 data cables according to the signals: positive and negative. (For RS-485 data.)
③ This equipment is indoor use and all the communication wirings are limited to inside of the building

3-2-2. Receiver-Side UTP Cable

Copper Connector

1 2 3 4 5 6 7 8

UTP Coating

① Connect an RJ-45 Plug to a Receiver UTP cable.
② Connect an RJ-45 plug to a Receiver connector on the SPU-400.
③ Connect the AC power plug to the AC Inlet on the SPU-400.
④ Double check the UTP connections, and then turn on the power switch on the back side. The camera starts operating as the front LED turns green.
⑤ At the Receiver end, check the video signaling status.
⑥ This equipment is indoor use and all the communication wirings are limited to inside of the building

3-3. SPU-400 Connector Wiring Chart

RJ-45 Connector Wiring Chart for Video Input (Camera ⟷ SPU-400)

No.	Color	Function
1	Orange + White	Video Output +
2	Orange	Video Output -
3	Green + White	RS-485 TX +
4	Blue	AC Power -
5	Blue + White	AC Power +
6	Green	RS-485 TX -
7	Brown + White	AC Power +
8	Brown	AC Power -

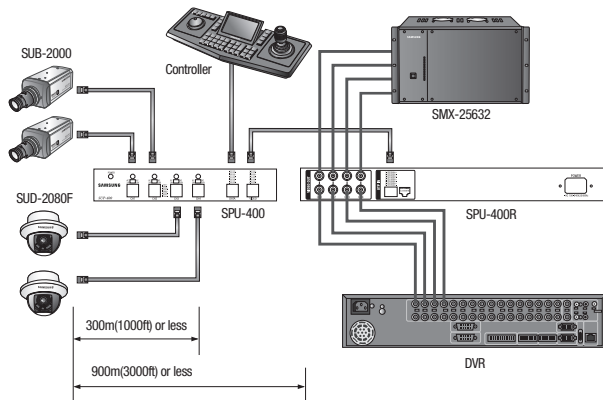RJ-45 Connector Wiring Chart for Video Output (SPU-400 ⟷ Receiver)

No.	Color	Function
1	Orange + White	Camera 2, (+)
2	Orange	Camera 2, (-)
3	Green + White	Camera 3, (+)
4	Blue	Camera 1, (-)
5	Blue + White	Camera 1, (+)
6	Green	Camera 3, (-)
7	Brown + White	Camera 4, (+)
8	Brown	Camera 4, (-)

RJ-45 Connector Wiring Chart for Data Input (SPU-400 ⟷ Controller)

No.	Color	Function
1	Orange + White	RS-485 2, (+)
2	Orange	RS-485 2, (-)
3	Green + White	RS-485 3, (+)
4	Blue	RS-485 1, (-)
5	Blue + White	RS-485 1, (+)
6	Green	RS-485 3, (-)
7	Brown + White	RS-485 4, (+)
8	Brown	RS-485 4, (-)

3-4. Connecting Peripheral Devices

SUB-2000
Controller
SMX-25632
SUD-2080F
SPU-400
SPU-400R
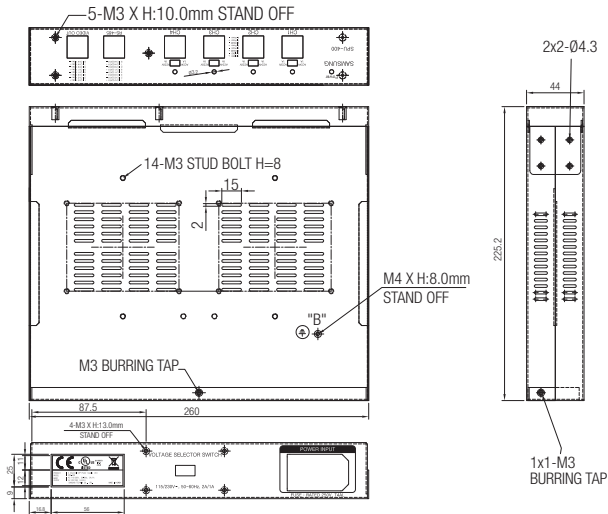300m(1000ft) or less
900m(3000ft) or less
DVR

Notes

Rack Mount Instructions

1) Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.

2) Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

3) Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

4) Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

5) Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips)."

Model		SPU-400	
Video Input Signal		Cable Link Only	
Power	Input	AC 115/230 V 50/60 Hz	
	Output	24 VAC/28 VAC, 1 amp.	
	Optional Feature	24 VAC/Off/28 VAC switchable	
	Power On Display	Green	
	Protection	4 A Fuse	
Maximum Distance (CAT. 5e UTP Cable)	Camera Power (SUB-2000 Camera)	24 VAC	300m
		28 VAC	400m
	Video/Data Signal	Cable link only	
Connection Port	Video Input	4-Port (RJ-45)	
	Video Output	1-Port (RJ-45)	
	Data	1-Port (RJ-45)	
LED Display	Off	Not connected	
	Green	Load connected and working	
	Amber	Overload	
	Red	Short shutdown condition	
Operating Temperature/Humidity		-10ºC ~+50ºC / 0 ~ 80%	
Material/Weight		Steel/4kg	
Dimension		260(W) x 44(H) x 225.2(D)	

5. Product Warranty

5-M3 X H:10.0mm STAND OFF

2x2-Ø4.3

44

14-M3 STUD BOLT H=8

15

225.2

M4 X H:8.0mm
STAND OFF

"B"

M3 BURRING TAP

87.5   260

4-M3 X H:3.0mm
STAND OFF

VOLTAGE SELECTOR SWITCH

POWER INPUT

1x1-M3
BURRING TAP

Class A Divice

NOTE : This equipment has been tested and found to comply with the limits for class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide resonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CAUTION : Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

DECLARATION OF CONFORMITY

Application of Council Directive(s)	89 / 336 / EEC
Manufacturer's Name	SAMSUNG TECHWIN CO., LTD
Manufacturer's Address	SAMSUNG TECHWIN CO., LTD
	42, SUNGJU-DONG CHANGWON-CITY,
	KYUNGNAM, KOREA, 641-716
European Representative Name	
European Representative Address	
Equipment Type/Environment	UTP Power Supply Hub
Model Name	SPU-400
Beginning Serial NO.	S7090001
Year of Manufacture	2010. 01. 01
Conformance to	EN61000-6-4:2007
	EMC-Directive 89/336 EEC and 92/31/EEC
	EN61000-6-2:2005

We, the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s).

Manufacturer	SAMSUNG TECHWIN CO., LTD	Legal Representative in Europe
Signature	*BJ Gu*	Signature
Full Name	BONJENG GU	Full Name
Position	QUALITY CONTROL MANAGER	Position
Place	CHANGWON, KOREA	Place
Date	2010. 01. 01	Date

MEMO

MEMO

MEMO

MEMO

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