

# Installation Guide

## DS-8100-S Series DVR



### Verify Contents

Verify that the package contents are correct by checking the items against the packing list.

**Note:** Please contact your dealer for damaged or missing items.

### DVR Pre-Installation

The DS-8100-S Series DVRs are highly advanced surveillance equipment that should be installed with care. Please take into consideration the following precautionary steps before installation of the DVR.

1. Keep all liquids away from the DVR.
2. Install the DVR in a well-ventilated and dust-free area.
3. Ensure environmental conditions meet factory specifications.
4. Install a manufacturer recommended HDD.

### DVR Installation

During the installation of the DVR:

1. Use brackets for rack mounting.
2. Ensure there is ample room for audio and video cables.
3. When installing cables, ensure that the bend radius of the cables are no less than five times than it's diameter.
4. Connect both the alarm and RS-485 cable.
5. Allow at least 2cm (~0.75in) of space between racks mounted devices.
6. Ensure the DVR is grounded.
7. Environmental temperature should be within the range of -10°C ~ 55°C, 14°F ~ 131°F.
8. Environmental humidity should be within the range of 10% ~ 90%.

### Hard Disk Installation

Before installing a hard disk drive (HDD), please make sure the power is disconnected from the DVR. A factory recommended HDD should be used for this installation.

**Tools Required:** Phillips screwdriver.

To install a HDD on your DVR:

1. Remove the lid of the DVR by unfastening the screws on the back.



2. Install the HDD in the HDD rack using the provided screws. To install on the bottom HDD rack, the top HDD rack must be removed first.



3. Connect the HDD to the motherboard of the DVR with the included data cable.



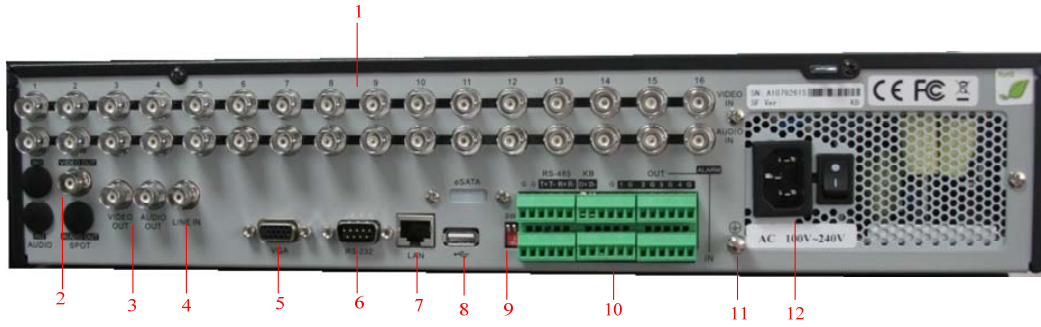
4. Connect the power cable to the HDD.



5. Re-install the lid of the DVR and fasten screws.



## Rear Panel Diagram

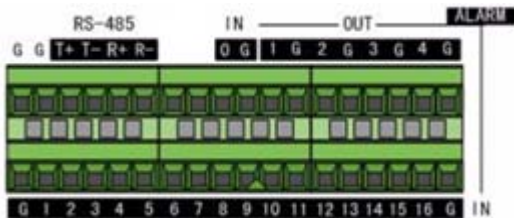


No.	Item	Description
1	VIDEO IN	BNC connectors for analog video input.
	AUDIO IN	BNC connectors for analog audio input.
2	VIDEO SPOT OUT	BNC connector for monitor. Single window view.
3	VIDEO OUT	This interface is set to not function
	AUDIO OUT	BNC connector for audio output. This connector is synchronized with VIDEO OUT.
4	LINE IN	BNC connector for audio input.
5	VGA	VGA output. Display local video output and menu.
6	RS232	DB9 connector for RS232.
7	LAN Interface	Connector for LAN (Local Area Network)
8	USB Interface	Connector for USB devices.
9	Matching Resistor Switch(SW)	Terminal matching resistor switch for 485 bus, and its upwards (default) means cut off the resistor, its downwards means connecting a 120 ohm resistor.
10	RS-485 Interface	Connector for RS-485 devices. T+, T- pin connects to PTZ.
	Controller port	D+, D- pin connects to Ta, Tb pin of controller. For cascading devices, the first DVR's D+, D- pin should be connected with the D+, D- pin of the next DVR.
	ALARM IN	Connector for alarm input.
	ALARM OUT	Connector for alarm output.
11	GROUND	Ground(needs to be connected when DVR startup)
12	POWER	AC 100~240V

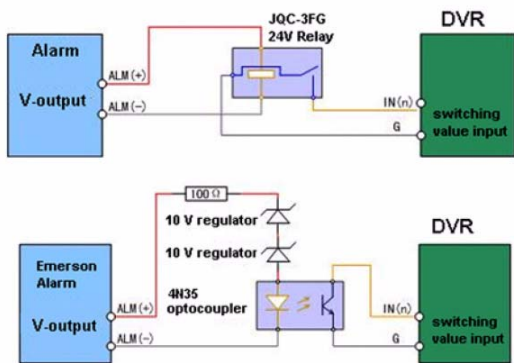
## Peripheral Connections

### Connecting to Alarm Input / Output Device

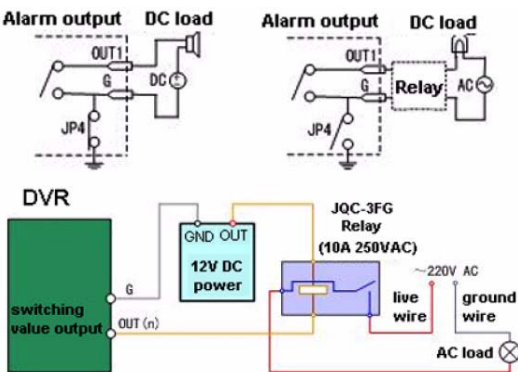
The alarm input/output interface of the DVR is shown below:



The alarm input is an open/close relay. If the input is not an open/closed relay, follow the connection diagram below:



To connect to an AC/DC load, use the following diagram:



For DC load, JP4 can be used within the limit of 12V/1A safely. If the interface is connected to an AC load, JP4 should be left open. Use an external relay for safety (as shown in the

figure above).

There are 4 jumpers (JP4, JP5, JP6, and JP7) on the motherboard, each corresponding with one alarm output. By default, jumpers are connected. To connect an AC load, jumpers should be removed.

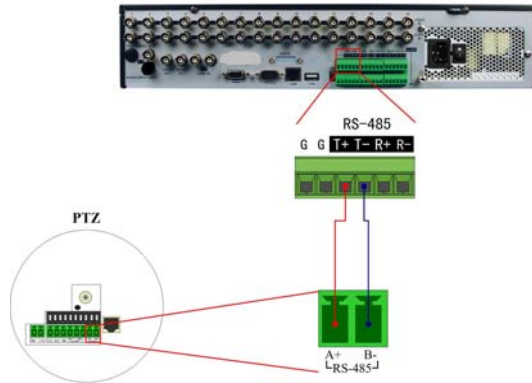
**Note:** An external relay is needed to prevent electric shock when connecting to an AC load.

### Alarm Connection

To connect alarm devices to the DVR:

1. Disconnect *pluggable block* from the ALAM IN /ALARM OUT terminal block.
2. Unfasten stop screws from the *pluggable block*, insert signal cables into slots and fasten stop screws. Ensure signal cables are in tight.
3. Connect *pluggable block* back into terminal block.

### RS-485 Connection

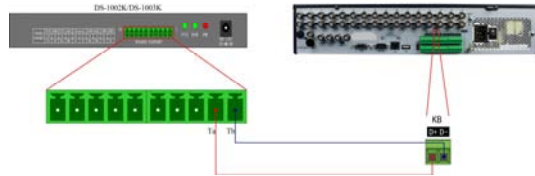


To connect RS-485 devices to the DVR:

1. Disconnect *pluggable block* from the RS-485 terminal block.
2. Unfasten stop screws from the *pluggable block*, insert signal cables into slots and fasten stop screws. Ensure signal cables are in tight.
3. Connect *pluggable block* back into terminal block.

**Note:** The RS-485 PTZ control should be connected with the T+ and T- pin on the RS-485 terminal block.

## Controller Connection



To connect a controller to the DVR:

1. Disconnect *pluggable block* from the KB terminal block.
2. Unfasten stop screws from the KB D+, D- *pluggable block*, insert signal cables into slots and fasten stop screws. Ensure signal cables are in tight.
3. Connect Ta on controller to D+ on terminal block and Tb on controller to D- on terminal block. Fasten stop screws.
4. Connect *pluggable block* back into terminal block.

**Note:** Make sure both the controller and DVR are grounded.

256K	112M
320K	140M
384K	168M
448K	196M
512K	225M
640K	281M
768K	337M
896K	393M
1024K	450M
1280K	562M
1536K	675M
1792K	787M
2048K	900M

**Note:** Please note that supplied values for storage space used is just for reference. Storage space used is estimated by formulas and may have some deviation from actual value.

## HDD Storage Calculation

### Chart

The following chart shows an estimation of storage space used based on recording at one channel for an hour at a fixed bit rate.

Bit Rate	Storage Used
96K	42M
128K	56M
160K	70M
192K	83M
224K	98M