



# Head-End Station

CSE 3319



Art. No. 325102

GB

# Assembly Instructions



TRIAX - your ultimate connection

# Contents

<b>1</b>	<b>Notes about safety and hazards</b> .....	<b>3</b>
<b>2</b>	<b>General information</b> .....	<b>4</b>
2.1	Meaning of the symbols used.....	4
2.2	Scope of delivery.....	4
2.3	Available accessories.....	4
2.4	Technical data.....	5
2.5	Description.....	6
<b>3</b>	<b>Overview</b> .....	<b>7</b>
<b>4</b>	<b>Installing the head-end station</b> .....	<b>9</b>
4.1	EMC regulations.....	9
4.2	Installing cassettes.....	9
4.3	Installing into rack systems.....	10
4.4	Power supply.....	12
<b>5</b>	<b>Aeration</b> .....	<b>13</b>
<b>6</b>	<b>Features of the control unit</b> .....	<b>15</b>

# 1 Notes about safety and hazards



- Observe the relevant VDE regulations.
- **If the power cord needs to be replaced, only use an OEM power cord.**
- **Only replace fuses with fuses of the same type, and which also have the same cut-off characteristics.**
- Earth the receiving system according to DIN EN 50083-1 / 60728-11.
- Before starting installation or service work disconnect the receiving system from mains.
- Do not perform installation and service work during thunderstorms.



- Assembly, installation and servicing must be carried out by an authorised electrician.
- Install the head-end station
  - in a dry, dust-free environment
  - in such a manner that it is protected from moisture, fumes, splashing water and dampness
  - where it is protected from direct exposure to sunlight
  - on a vibration-free wall or floor construction
  - not within the immediate vicinity of heat sources
- The head-end station should only be installed in a room where the permissible ambient temperature range (-10 °C and +50 °C ) can be maintained, even during fluctuations in climatic conditions.
- Ensure that the head-end station is adequately ventilated.
- Do not cover the ventilation openings!
- To avoid too strong heating of the head-end stations it is not admissible to mount them one upon the other without using thermic precautions (e.g. permanently air recirculation, heat deflectors etc.).
- Do not install the head end in cabinets or recesses which are not ventilated.
- If additional fans are to be used to circulate the air, ensure that the system will be shut down (disconnected from mains) should any one of the fans fail.
- Do not place any vessels containing liquids on the head-end station.
- Due to the risk of fires caused by lightning strikes, we recommend that all mechanical parts (e.g. distributor, equipotential bonding rail, etc.) be mounted on a non-combustible base. Wood panelling, wooden beams, plastic covered panels and plastic panels are all examples of combustible bases.
- Avoid short circuits!
- Observe the relevant standards, regulations and guidelines on the installation and operation of antenna systems.

- To ensure electromagnetic compatibility, make sure all connections are tight and that the covers are screwed on securely.
- No liability is accepted for damage caused by faulty connections or inappropriate handling of the device.



Electronic devices should never be disposed of in the household rubbish. In accordance with directive 2002/96/EC of the European Parliament and the European Council from January 27, 2003 which addresses old electronic and electrical devices, such devices must be disposed of at a designated collection facility. At the end of its service life, please take your device to one of these public collection facilities for proper disposal.

## 2 General information

### 2.1 Meaning of the symbols used



Important note



Danger by electrical shock

### 2.2 Scope of delivery

- 1 CSE 3319 head-end station (without cassettes),  
power supply and control unit included
- 4 prestole nuts M 6
- 4 fixing screws M 6 x 16 mm with plastic washers
- 1 CD (assembly instructions)

### 2.3 Available accessories

For cassettes and accessories see website "<http://www.triax.com>".

## 2.4 Technical data

The requirements of the following EU directives are met:

73/23/EC and 89/336/EC

The product fulfils the guidelines and standards for CE labelling.

### General

Cassette slots:	8
Input frequency range (SAT IF):	950–2150 MHz
SAT input splitter:	2 with 9 outputs each
Passage loss (9-fold):	max. 18 dB
Input impedance:	75 $\Omega$
Remote LNB power supply:	+18 V / max. 1 A total (< 800 mA per input splitter)
Output frequency range of the RF collector:	48 MHz ... 865 MHz
Output level of the RF collector (depending on the cassette fitted):	typ. 80 dB $\mu$ V
Output attenuation of the RF collector:	typ. 18 dB
Output impedance:	75 $\Omega$
Setting range of the RF level controls:	-20 dB
Mains voltage:	220–240 V~; 50/60 Hz
Power consumption:	max 200 W when fully equipped, LNB power supply included
Admissible ambient temperature:	-10 °C to +50 °C; without humidification and dehumidification
Dimensions W x H x D:	482 mm x 356 mm x 254 mm
Inner dimensions W x H x D:	448 mm x 356 mm x 251 mm
Weight:	fully equipped about 19 kg

## 2.5 Description

This head-end station is the basic unit of a modular system for the reception and conversion of analog satellite broadcasts (radio and TV), digital satellite broadcasts (radio and DVB TV = **D**igital **V**ideo **B**roadcasting), and terrestrial radio and TV broadcasts. It is provided for the installation of medium-sized and large broad-band cable systems.

This head-end station is designed exclusively for use with cassettes of the Standard marketing programme. You can find a list of the current Standard cassettes at the website "<http://www.triax.com>". The various expansion options for the head-end station allow for the installation of a wide range of broadband cable systems.

After connecting the head-end station to the mains voltage, all cassettes are supplied with the required operating voltages by a switched-mode power supply unit via the plug-in connectors on the contact rail. The central control unit is connected via I<sup>2</sup>C bus lines (SDA, SCL) to the cassettes. The passive input splitter provides highest flexibility when selecting signals with horizontal or vertical polarization. The cassettes are connected to the outputs of the input splitters. The input splitters can be operated from a remote voltage supply, that is, the LNBS can be supplied with an operating voltage of +18 V and a current of max. 1 A ( $I_{\max.} < 800 \text{ mA}$  per input splitter). Each of the two inputs has nine outputs. All RF output signals of the cassettes are unified in the RF output collector, and then passed on to the RF »**OUTPUT**« socket of the head-end station. The RF output level of about 80 dB $\mu$ V depends on the cassettes fitted.

At the factory, the output level controls of the head-end station are set to maximum-output level for the cassettes. Please adjust the output level of the individual cassettes with the associated level controls on the front panel of the head-end station to the following values:

For analog TV broadcasts to about 70 to 80 dB $\mu$ V.

For digital TV broadcasts (64 QAM) about 6 to 10 dB lower than for analog TV broadcasts.

For FM radio broadcasts about 10 dB lower than for analog TV broadcasts.

The RS 232 interface of the control unit enables you to use a PC or a notebook and the "**BE-Flash**" software to update the operating software of the control unit. You can find the current operating software for the control unit, the software "**BE-Flash**" and the current assembly instructions on the website "<http://www.triax.com>".

### 3 Overview

#### Front view

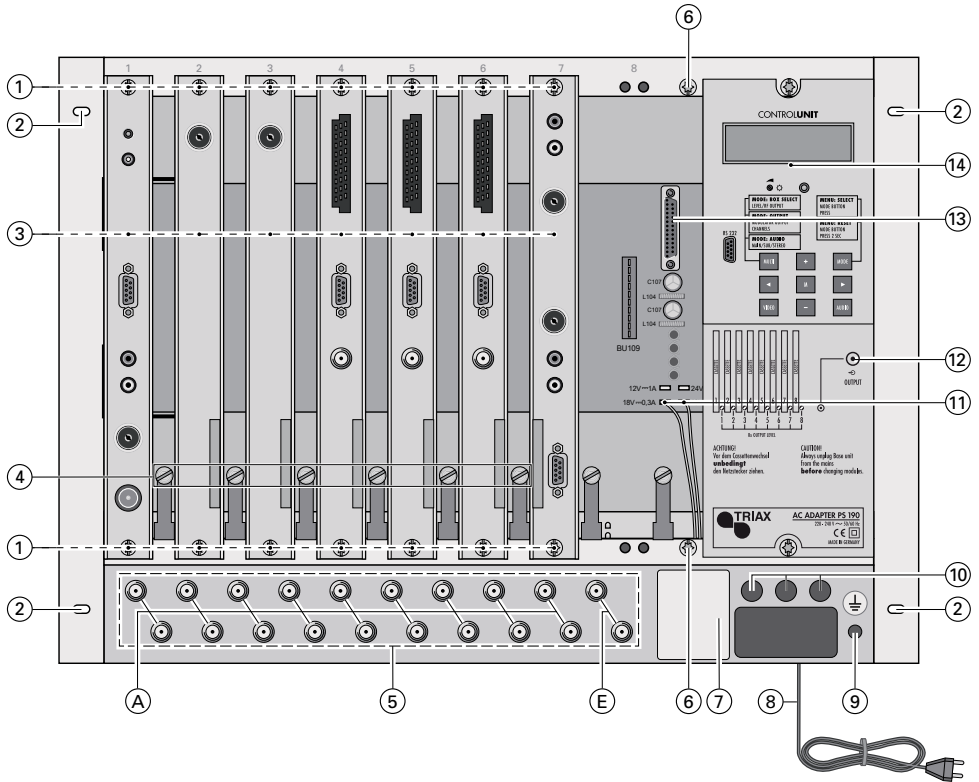


Fig. 1

- ① Fixing screws for the cassettes.
- ② Fixing holes of the head-end station.
- ③ Plug-in locations for 8 cassettes.
- ④ 8 level controls for the cassettes' output signal; setting range: 0 dB to -20 dB.
- ⑤ SAT input splitter (F-sockets): 2 inputs (E), 9 outputs (A) per input.
- ⑥ Two spare screws for the fixation of the cassettes.
- ⑦ Type plate.
- ⑧ Power supply connector; accessible from the bottom.
- ⑨ Opening for a ground terminal: make the ground connection of the unit's frame according to DIN EN 50083/1, VDE 0855, Part 1.

- ⑩ Three openings for feed-through elements, e.g. IEC or F feed-through sleeves.
- ⑪ Two plugs for the LNB supply voltage (+18 V / max. 1 A total).
- ⑫ RF socket of the output collector.  
This output socket is located on the back of the head-end station.
- ⑬ 25-pin connector for the connection of a second head-end station if two head-end stations are to be controlled via one control unit only.
- ⑭ Control unit with display; behind it the power supply unit.

## The control unit

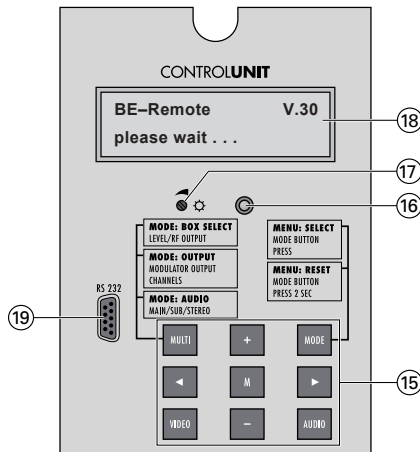


Fig. 2

- ⑮ The buttons on the control unit
  - »**MULTI**«: The function is dependent on the cassettes used.
  - »**MODE**«:
    - To next menu item.
    - Back to access menu.
  - »**VIDEO**«: The function is dependent on the cassettes used.
  - »**AUDIO**«: The function is dependent on the cassettes used.
  - »**< ▶**« (cursor functions):
    - select settings; move the cursor in the display ( \_ ) to the left or right.
  - »**+ / -**«: change settings.
  - »**M**« (memory): save settings.
- ⑯ LED, illuminated during operation.

- ⑰ Display contrast control.
- ⑱ 2-line LC display.
- ⑲ 9-pin Sub-D socket »RS-232«. Input socket for software update.

## Rear view

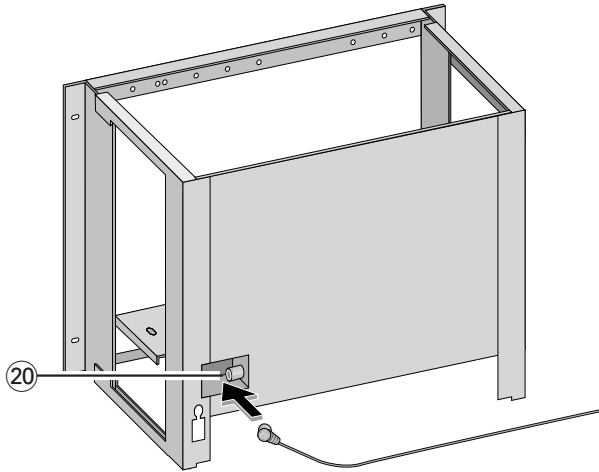


Fig. 3

- ⑳ RF »OUTPUT« socket

## 4 Installing the head-end station

### 4.1 EMC regulations



To comply with the current EMC regulations, it is necessary to connect the lines leading in and out of the 19" cabinet (e.g. Cinch, HF) using standard cable terminals.

### 4.2 Installing cassettes



- Before installing or replacing a cassette or the power supply unit, it is absolutely necessary to disconnect the power supply plug of the head-end station from the wall outlet.
- Install and connect the cassette in the head-end station according to the instructions given in their user manuals.

### 4.3 Installing into rack systems



- The head-end station has been designed for installation into 19" rack systems.
- It is absolutely necessary to make sure that the fixation in the rack system is able to carry the high weight of the head-end station(s).

#### Installation material supplied:

4 Prestole nuts M 6

4 fixing screws M 6 x 16 mm with plastic washers

#### Precondition:

The rack system is completely assembled, the support elements for placing the 19" unit are already installed.

The total installation height of a 19" unit is 8 HU (= height units, see Fig. 4).

8 height units correspond to about 356 mm.

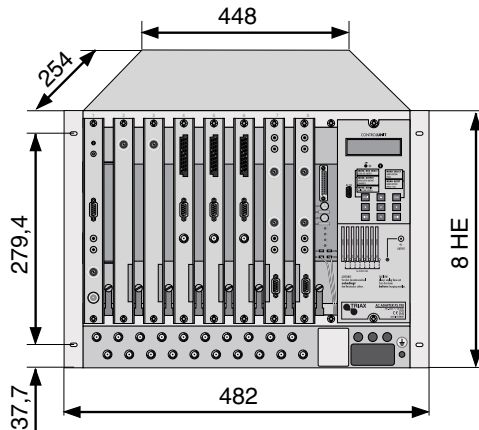


Fig. 4

1 Fit the four prestole nuts accurately into the frame of the rack system (Fig. 5).

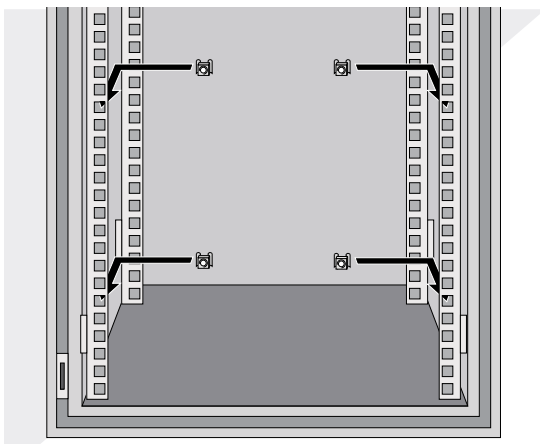


Fig. 5

2 Insert the head-end station into the rack system then fix it with the enclosed screws (see Fig. 6).

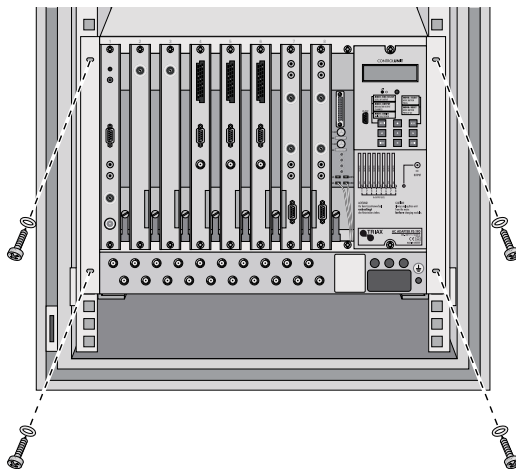


Fig. 6



**Before putting the rack system into operation, ground it according to the regulations DIN EN 50083/1, VDE 0855, Part 1.**

- 3 Connect the mains plug of the head-end station to a wall outlet (220-240 V~, 50/60 Hz).



The head-end station is only completely separated from the mains voltage by pulling the power supply plug.

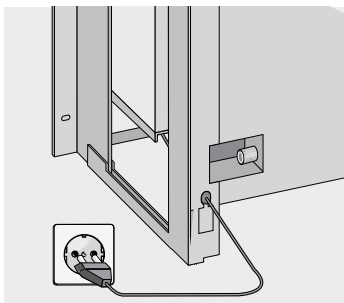


Fig. 7

- 4 Set up the cassettes according to the instructions given in their user manuals.

#### 4.4 Power supply



The power supply unit of the head-end station is especially magnetically shielded. When exchanging or replacing the power supply unit, please make sure that it is always installed into the head-end station with the shielded cover fitted (power supply, type PS 190).

## 5 Aeration



When installing the head-end station into a rack system, it is absolutely necessary to make sure that the ambient and operating temperatures do neither fall below nor exceed the admissible range (-10 °C to +50 °C) specified.

A circular aeration, for example by means of ventilators, is to be ensured inside the rack system.

In addition, it is necessary to permanently control by means of thermo elements the ambient and operating temperature of max. 50 °C specified.

If the ambient and operating temperature inside the rack system exceeds 50 °C max., the thermo switch of the rack system must automatically disconnect the rack system from the power supply.

The figure below shows a rack system equipped with four head-end stations CSE 3319.

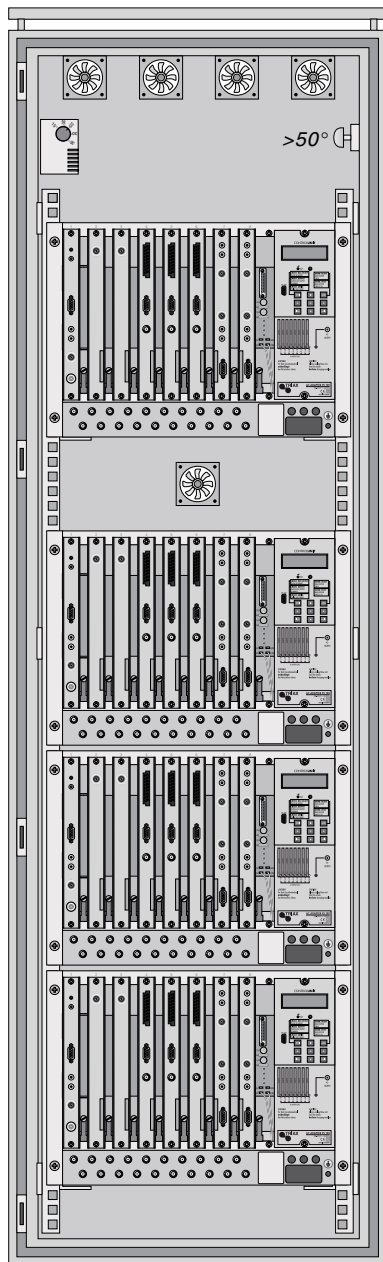


Fig. 8

## 6 Features of the control unit

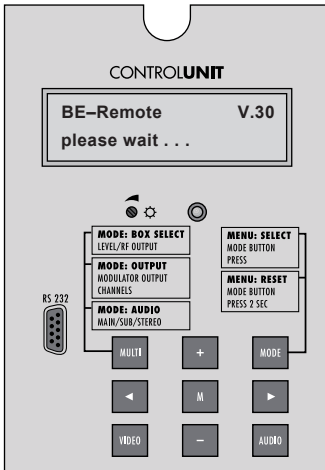


Fig. 9

All input and output parameters of the individual cassettes can be selected with the buttons on the control unit.

The user is guided by a two-line display on the control unit.

When switching on the head-end station, the software version of the control unit is briefly indicated in the 2-line display.

About 5 minutes after the last button is pressed, the display is automatically switched off, or the software version of the control unit is displayed.

### Note:

If desired, the software version of the control unit can also manually be displayed in the following way:

Press any two buttons on the control unit of the head-end station at the same time and hold them down until the following occurs:

- The display turns dark,
- after several seconds, the software version, e.g. V.30, is displayed.

The current software version of the head-end station and the cassettes can be downloaded from the Internet address "<http://www.triax.com>".

