Mark IV Vidicon Camera Channel
Type BD 896

DESIGNED primarily for telecine (see page 112) and similar static applications, the Type BD 896 Vidicon Camera Channel has a high degree of interchangeability with the Type BD 863 Image Orthicon Camera Channel. For the purposes of maintenance, the picture and waveform monitor, camera control and power supply are identical.

The channel can be set to 405/525/625-line standards and a version is available to switch between the three systems by the operation of a single switch. Aperture correction is provided and this can be switched between '16 mm' and '35 mm/slide' settings.

The BD 896 Camera Channel has recently been improved and the performance is now even better than the previous high standard. The improvements have involved raising the wall electrode voltage to 1000 volts and reducing the capacity of the signal electrode. A new head amplifier has also been designed which, together with alterations to the yoke, affords improved resolution, signal-to-noise ratio and beam landing performance.


8700

The camera control panel – normally mounted below the picture and waveform monitor in a standard console, Type 4785.

Features

- All operational controls on the camera control panel.
- Yoke with excellent geometry, blower cooling, located by lens system to eliminate optical alignment problems.
- Wide scanning range with linearity maintained, for caption and special effects ('inlay') use.
- Particular attention to negative film reproduction with separate pre-set gamma controls for positive and negative film and with instant change-over.
- Simple maintenance with plug-in printed-wiring sub-units having long-life valves.

EQUIPMENT

The channel consists of:

(*a*) Camera Head Unit.
(*b*) Camera Control Unit.
(*c*) Regulated Power Supply.
(*d*) Camera Control Panel.
(*e*) Picture and Waveform Monitor, Type BD 873.
(*f*) Studio Console, Type 4785.
(*g*) Camera Cable, quick-release, 50 ft.
(*h*) Connectors.
(*j*) Camera lens, focal length as required (5 cm for Type BD 922A Telecine).


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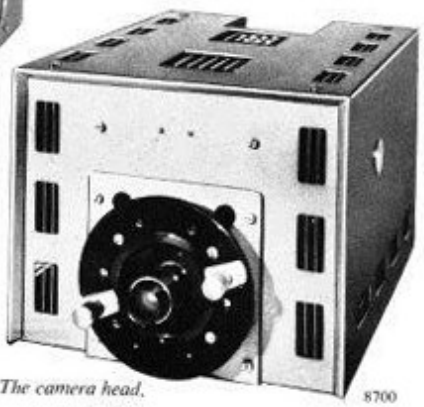
The camera control unit and regulated power supply are each contained in a standard case.


The camera head. 8700

Camera

The Camera head is designed for easy location in the optical axis and mounts vertically in the Type BD 923 Multiplexer. The lens flange is located accurately in a fixed housing and carries the yoke assembly which is flexibly mounted relative to the camera body. This system enables the camera to be quickly and accurately replaced in the multiplexer or other mounting.

The four printed-circuit boards in the camera deal with vision amplifier and connection circuits, line scan, target blanking, beam landing correction and scan failure protection. Line scanning is by a Class B amplifier with a wide amplitude range and very good linearity.

The yoke has a 4 : 3 ratio mask. The vidicon cathode circuit has 'landing correction' applied which permits the successful use of a wide range of tubes including those which need large parabolic signal amplitude correction.

The amplifier will deal with the dark current of the Type 7038 vidicon. A quick-release camera cable connects the camera to the power supply and camera control units, which are available in rack-mounted or mobile form. These two units may be mounted side-by-side across the width of a standard 19 in. (48 cm) rack. Automatic alignment waveforms provided.

The camera control panel carries all operational controls and is a passive unit remotely controlling circuits in the camera control unit. Separate 'coarse' and 'fine' controls are provided where necessary to facilitate setting up where vidicon parameters cover a wide range. A 'gain calibration' switch applies a signal (equivalent to a preset value of beam current) to the input of the head amplifier and enables gain of the channel to be adjusted. It mounts in the well of a Type 4785 Studio Console, generally under a Type BD 873 Picture and Waveform Monitor which is included in the channel. Associated controls, for film projectors and other units are usually mounted in an adjacent console.

The camera has found other applications, for viewing captions and for special effects switching, using the Electronic Switch Type BD 855.

Power supply unit

This uses the same transductor regulator as the Mark IV Image Orthicon Camera, but has an auxiliary power supply in place of the iris servo amplifier.

ADDITIONAL FEATURES

Provision has also been made for the easy adaptation of the camera to include a zoom lens, making it suitable for announcer studios without the need for a cameraman. When coupled with a remotely controlled pan-and-tilt head, the camera may be completely unmanned.

Data Summary

Inputs:

(*a*) 100–125 V or 200–250 V (5 V steps), 50 or 60 c/s, single-phase a.c, 2 kVA.

(*b*) 2 V or 4 V drives, blanking and sync. pulses.

Outputs: 2 independent vision outputs composite or non-composite, standard level into 75 Ω.

Scanning range: Continuously variable from 40% to 120% of normal horizontal and vertical scans. Separate controls provided.

Geometry: Through the range of scan, the position of any point does not deviate from the ideal by more than ±1% of height and width within a central zone, of diameter equal to the scan width and outside this deviation does not exceed ±2%.

Gamma correction: Variable laws to suit positive or negative film, automatically selected when switching from positive to negative.

Amplitude/frequency response (35 mm–525/625 lines): Without aperture correction, flat ±0·3 dB to 6 Mc/s—less than 1 dB at 7 Mc/s.

Resolution: Without aperture correction, no more than −4 dB at 400 lines/picture height.

Signal-to-noise: With the camera adjusted for resolution as above, no more than 45 dB r.m.s. noise with ref. to 0·7 V p-p signal over a bandwidth of 5·5 Mc/s.

Aperture correction: Sufficient correction provided to bring the 400 lines modulation to 100%. Two standard phaseless aperture-correction circuits included; one for camera tube and one for film loss giving total of 15 dB boost at 400 lines/picture height.

Dimensions:

	Height	Width	Depth	Weight
Camera head	1 ft 2⅛ in. (37 cm)	1 ft 1 in. (33 cm)	11 in. (28 cm)	22 lb (approx.) (10 kg)
Camera power supply unit	1 ft 3⅛ in. (39·6 cm)	8⅝ in. (21·8 cm)	2 ft 0¼ in. (61·6 cm)	
Camera control unit	1 ft 3⅛ in. (39·6 cm)	8⅝ in. (21·8 cm)	2 ft 0¼ in. (61·6 cm)	
Camera control panel	1 ft 2⅛ in. (36 cm)	10 in. (25·4 cm)	7¾ in. (19·7 cm)	

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