

MINI-CAMERA TYPE BC601A
and associated Pre-amplifier Type CA601A

This camera is suitable for application where physical size is of the utmost importance, e.g. the inspection of pipes and tubes and the interior of atomic reactors. It can be fitted with a range of remote controls, details of which will be found on the following pages. These, together with the All Purpose Housing specially designed for this camera, make it a very versatile tool for difficult locations:



Pre-amplifier Type CA601A

Valves and Tube
Camera 10667 Vidicon camera tube. 7077GE head amplifier.
Pre-amplifier E88CC (2). E180F (2).

Ventilation
Camera None required.
Pre-amplifier Natural flow

Cable Connections
Camera Free plug on flying lead to mate with camera cable socket. Plessey Mk. 4 25 way coarse thread, brass.
Pre-amplifier Plessey Mk. 4 25 way socket (linking camera to amplifier). Plessey Mk. 4 25 way plug (linking amplifier to C.C.U.)

Cable
25 way 7A/B7654 between mini-camera and pre-amplifier.
25 way 7A/B4313 between pre-amplifier and C.C.U.

Controls
Camera Hand (optical) focus of camera by knob situated at rear of camera
Pre-amplifier None.

Dimensions
Camera Length (less cable and lens but including focus knob). $10\frac{5}{8}$ in (27 cm)
Diameter 3 in (7·6 cm)

Pre-amplifier
Height 6 in (15·24 cm)
Width $8\frac{1}{4}$ in (21 cm)
Depth $5\frac{3}{4}$ in (14·5 cm)
excluding plugs and sockets

Weight
Camera 6 lb (2·7 Kg)
Pre-amplifier 5 lb (2·25 Kg)

Power Supplies Taken from C.C.U. via 25 way cables.

Lens mount Dallymeyer Vidiac or Taylor, Taylor & Hobson "Vidital". C mount adaptor available.

Camera Mounting Threaded to take $\frac{1}{4}$ inch B.S.W. stud.

Pre-amplifier mounting Free standing or can be mounted at rear of C.C.U.

CAMERA CONTROL UNIT TYPE CC600

This Camera Control Unit is suitable for use with either the Standard or Mini-camera and can be used as a free standing unit or mounted in a standard 19 inch rack. All four sub-units are plugged into the main frame via a flying lead. This enables them to be either withdrawn

System Specification

System The equipment can be supplied for operation on any one of the following standards:
405 lines 50 fields interlaced
525 lines 60 fields interlaced
625 lines 50 fields interlaced

Resolution 650 lines over useful area of picture.

Bandwidth 8 Mc/s over the complete system.

Linearity Better than 2% positional error for both line and field scans.

Sensitivity With a scene illumination of 1 foot candle (50% subject reflection) and lens aperture at F2 a fully contrasted picture is obtained.

Camera Tube EMI 10667 or equivalent.

Spectral Response The spectral response of the vidicon tube is similar to panchromatic film. Ultra-violet and infra-red sensitive tubes are available to special order.

Ambient Temperature The maximum ambient temperature for continuous operation is:
Standard Camera, C.C.U. 122°F. (50°C.)
Monitor 100°F. (38°C.)
Mini-camera 149°F. (65°C.)
Mini-camera pre-amplifier 122°F. (50°C.)

Power Supply *Camera Control Unit* 110–115 and 195–255 volts 50/60 c/s 300 watts. (The fan motor must be changed for low voltage operation). The voltage range is selected by plug and socket connectors.
Standard Camera, Mini-camera and pre-amplifier All supplies are taken from the C.C.U.
Monitors 110–115 and 195–255 volts 50/60 c/s 150 watts.

Signal Output 1·4V composite video signal. 70/30 picture/sync ratio, white positive into 75 ohms.
R.F. output (when fitted with CM601 R.F. Modulator Unit) 100 mV.
For frequencies see detailed specification on R.F. Modulator Unit.

Dimensions and Weight Refer to the detailed specifications for each unit given on the following pages.

Finish Two tone hammer grey.

Lenses A wide variety of interchangeable lenses is available, for details see lens list and angle chart on pages 17 and 18.

Cables
Standard Camera to C.C.U. Type SC145
Mini-camera Pre-amplifier to C.C.U
18 – 14/0076 conductors
2 – 40/0076 conductors
1 – 75 ohm co-axial Capacitance 17 pF per ft.
Attenuation at 5 Mc/s. 0·9 dB per 100 ft.
1 – 50 ohm co-axial Capacitance 29 pF per ft.
Attenuation at 5 Mc/s. 0·7 dB per 100 ft.
Overall diameter: 0·6 in (15 mm). Maximum recommended length: 500 ft (152 m). If slight picture degradation can be tolerated max. length is 1000 ft (305 m).

Mini-camera to Pre-amplifier Type SC273
13 – 14/0076 conductors
6 – 23/0076 conductors
2 – 40/0076 conductors
1 – 125 ohm co-axial. Capacitance 0·7 pF per ft.
Attenuation at 5 Mc/s. 0·48 dB per 100 ft.
1 – 50 ohm co-axial Capacitance 29 pF per ft.
Attenuation at 5 Mc/s. 0·7 dB per 100 ft.
Overall diameter 0·8 in (22 mm). Maximum recommended length 500 ft (152 m).

C.C.U. to Monitors Co-axial cable only is used for this connection; two types are available, the standard cable T1057 and the low loss cable T1058. Cable Type T1058 is recommended for the best picture definition, where the cable length exceeds 500 ft.

T.1057 Characteristic impedance: 75 ohms (nominal). Attenuation per 100 ft (30·5 m) at 45 Mc/s: 2·3 dB. Overall diameter: 0·21 in (5·3 mm). Maximum recommended length: 500 ft (152 m).

T.1058 Characteristic impedance: 75 ohms (nominal). Attenuation per 100 ft (30·5 m) at 45 Mc/s: 1·2 dB. Overall diameter: 0·21 in (5·3 mm). Maximum recommended length: 1000 ft (305 m).

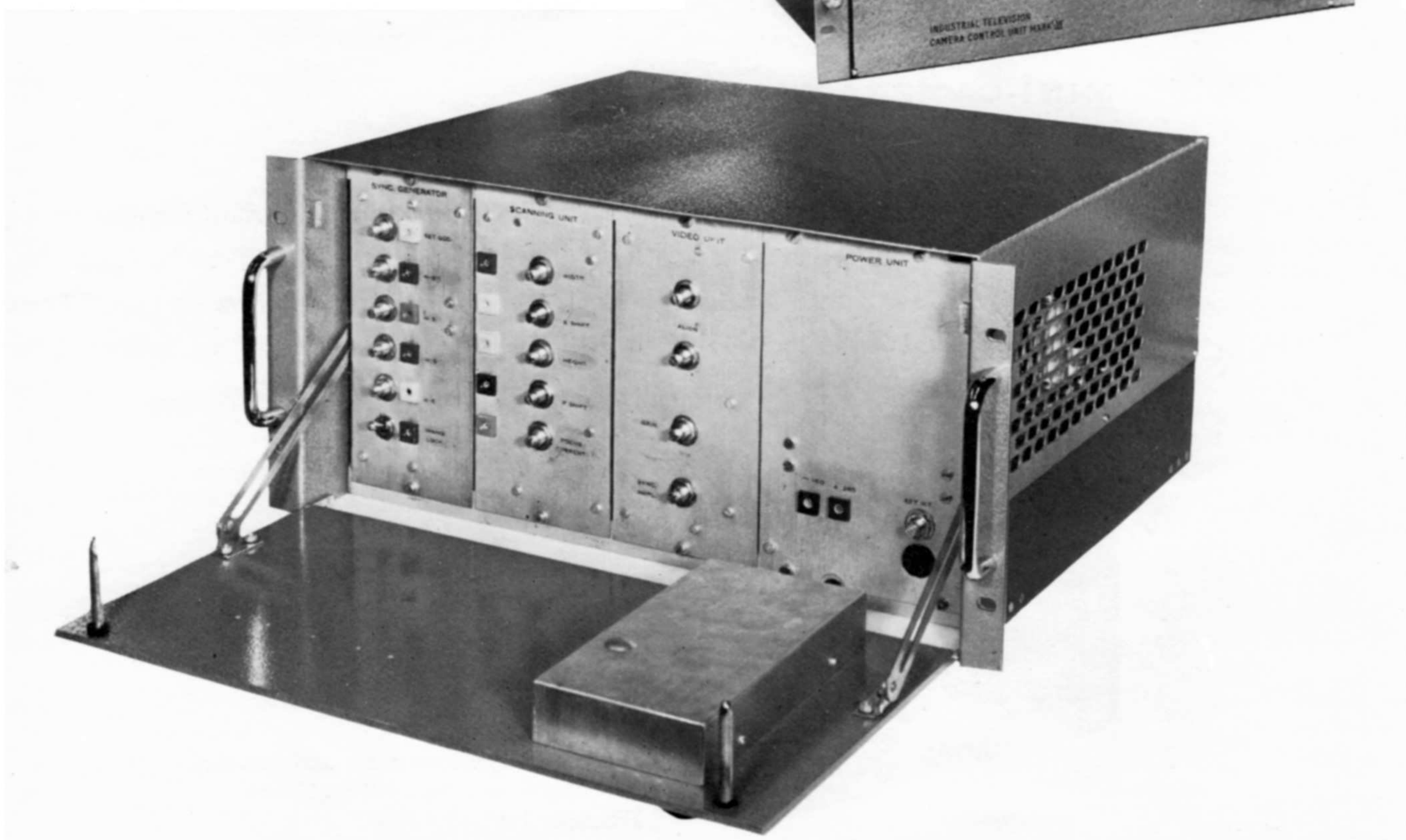
Which ever type of cable is used, the cable end connector required is Belling-Lee Screenector plug type L788/PP.

Remote Units Cables required for the remote control units are described in the technical specification on each unit.

Maximum distance remote control unit from camera 500 ft (152 m) unless otherwise stated.

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Camera Control Unit Type CC600 continued



on to the front panel for servicing purposes, or quickly changed when speed of servicing is of prime importance: the faulty unit can then be serviced at leisure. The normal operating controls and mains supply switch are mounted on the hinged front panel, behind which, on the sub-units, are the occasional and pre-set controls together with waveform monitoring points.

Valves

Sync Generator Type CC600GA (625 lines) CC600GB (525 lines) CC600GC (405 lines)
ECC82/12AU7 (3) Master Oscillator and Dividers
6F33 (3) Dividers
EB91 Mains Lock Discriminator
OA70 Restoring Diode
OA81 Restoring Diode
ECC81/12AT7 Divider

Scanning Generator Type CC600H
ECC83/12AX7 Field Blanking and Scanning
ECC82/12AU7 Field Blanking and Scanning
ECC81/12AT7 Field Scanning and Sawtooth Discharger
ECC81/12AT7 Line Sawtooth Discharger and Amplifier
ECL83 Line Linearising and Focus Stabiliser
EL84 Line Output
ECC81/12AT7 (2) Line and Field Sync Mixing
OA81 Field Sync Clipper

Video Amplifier Type CC600J
E180F Video Amplifier
ECC81/12AT7 Video Amplifier and Clamp Pulse Splitter
ECC81/12AT7 Aperture Corrector
ECC81/12AT7 Video and Sync Mixer
EL84 Video Output
OA81 (2) Black Level Clamp

Power Supply Type CC600K
GZ34 (3) h.t. Rectifier
EF91 h.t. Control
EL81 (4) Series Stabiliser
150C4 Negative h.t. Neon Reference Stabiliser

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