

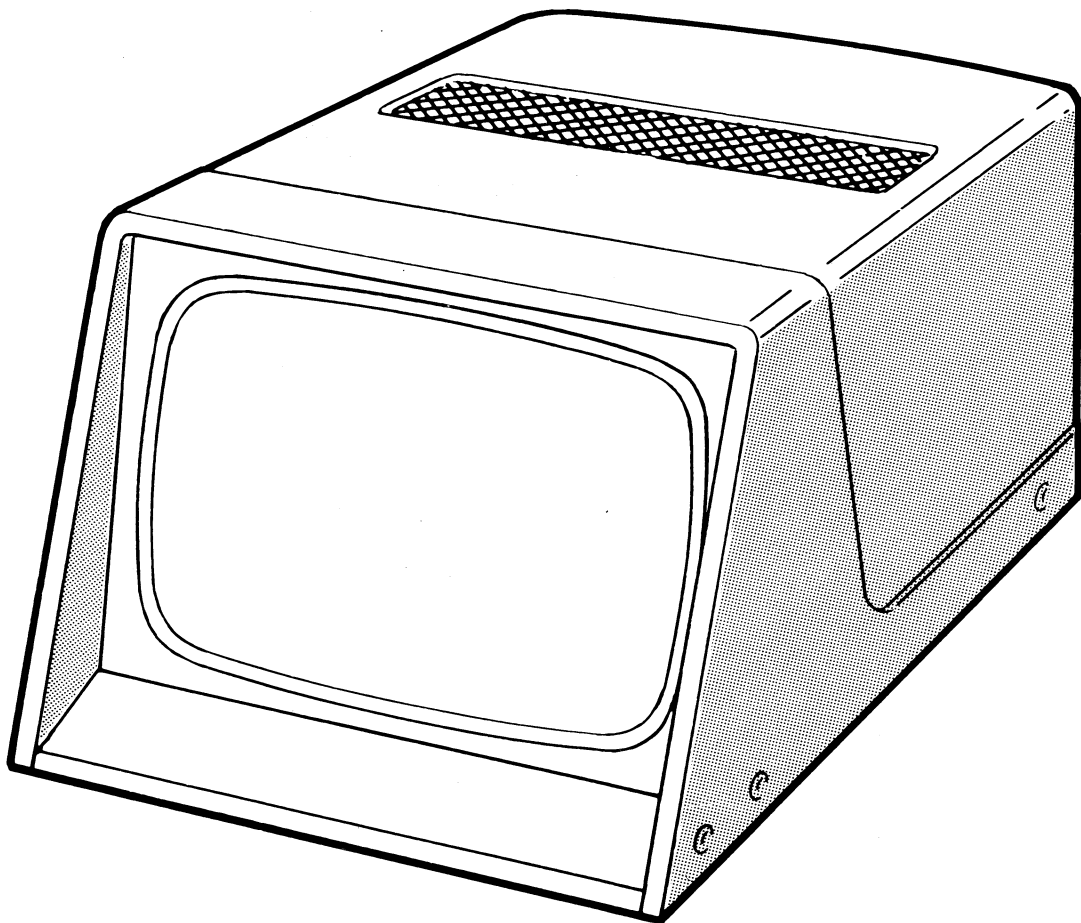
LUXOR
Computers

PRELIMINARY
EDITION

ABC 816

Display Unit 190 9412

Service Manual



ABC800[®]

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TECHNICAL SPECIFICATIONS

Picture tube	Size	10"
	Defl. angle	90°
	Neck diam.	20 mm
	Front radius	635 mm
	Phosphor	LA
Input signal Video		TTL
	Bandwidth	>20 MHz
	Rise/fall time (High)	<18/18 ns
	Amplitude	4±1,5 V TTL-level
	(Low)	0±0,4 V TTL-level 0 V
	Shunt resistance	300 Ω min
Shunt capacitance	40 pF max.	
H.sync	Frequency	15,625 kHz
	Polarity	Neg.
	Pulse width	5 μs
	Blanking (High)	11 μs
	Amplitude	4±1,5 V TTL
	(Low)	0±0,68 V TTL 0 V
	Shunt resistance	300 Ω min.
Shunt capacitance	40 pF max.	
V.sync	Frequency	50 Hz
	Polarity	Neg.
	Pulse width	1 ms
	Blanking (High)	1,1 ms
	Amplitude	4±1,5 V TTL
	(Low)	0±0,4 V 0 V
Shunt resistance	300 Ω min	
E.H.T		9 kV
Mains supply voltage		230 V +-15% AC
	frequency	50 Hz
	power consumption	
Defl. linearity	H	+ -6%
	V	+ -6%
Raster distortion	H	+ -1,5 % max.
	V	+ -1,5% max.

TECHNICAL DESCRIPTION

1.0 General information

This monitor is a fully transistorized display unit for use in systems requiring high video quality.

The monitor is built on a P.C.board, which together with an advanced integration ensures high reliability and uniform quality.

All inputs have been designed in such a way that they are easily adjustable for different signal combinations.

The monitor can be synchronized with composite horizontal and vertical sync pulses as well with composite video.

2.0 Function description

2.1 The video amplifier

The video amplifier consists of TB01 and TB02. These are driven by the gates IB01b and IB01c via CB02 and CB03.

2.1.1 Video , Video Reverse

The video signal (TTL level) is connected to pin 5 of the connector K1 (VIDEO). The polarity of the output of the gate ICW01 c and d, can be controlled with a TTL signal that is connected to pin 6 of the connector K1 (VIDEO REVERSE). The polarity is fixed by means of a jumper which has to be removed when using VIDEO REVERSE.

2.1.2 Retrace Blanking

The pulses for vertical and horizontal retrace blanking are added by means of transistor TB03. The horizontal retrace blanking pulse is taken from pin 3 of the line transformer, and the vertical pulse from pin 3 of TDA1170.

2.2 Vertical Deflection

Vertical deflection occurs by means of the IC TDA1170, which drives the required current through the deflection coil. TDA1170 also contains vertical oscillator, sawtooth generator and drive circuits.

2.2.1 Frame Rate

The frame rate is normally 50 Hz .

2.2.2 Picture Height.

The required picture height can be set with PA01.

2.2.3 Centring

The raster can be moved, in relation to the display screen, with the ring-shaped magnets on the deflection unit.

2.2.4 Synchronizing

Synchronizing pulses, positive or negative, are fed to pin 8 of TDA1170. Internal or external sync source can be selected by means of SA1.

2.3 Horizontal Deflection

The horizontal deflection is carried out by means of TA03 which drives the required current through the horizontal deflection winding. In addition to the E.H.T., and electrode voltages to the picture tube, the line transformer also supplies a number of auxiliary pulses for synchronizing, d.c. voltage to the video out put stage etc.

2.3.1 Synchronizing

Horizontal sync pulses or composite sync pulses are fed to pin 9 of the horizontal oscillator circuit TDA2591. These pulses must always be positive. TDA2591 contains a normal TV sync separator, wherefore it is also possible to have composite video on pin 9, which pulses are then separated in TDA2591.

2.3.2 Horizontal frequency, phase position

The nominal horizontal deflection frequency is 15.625 Hz which is set by means of PA02.

2.3.3 Picture width

Picture width can be adjusted, to some extent, with PN01 (NB! PN01 also affects the E.H.T.)

2.3.4 Linearity

The horizontal linearity is not adjustable, but corrected by LA03. (H-Lin)

2.3.5 Focusing

Static focusing is carried out by means of PA03.

2.4 Brightness adjustment

Brightness is set by means of PH01 on the back side of the set.

2.5 Protective circuits

To protect the picture tube from high-density burns, if faults should occur in the vertical deflection, the line output stage is cut off by means of TA02. This transistor is held conducting as long as blanking pulses come from pin 3 on TDA1170.

In case of a failure the voltage on pin 4 of TDA2591 remains at +6V which results in cut off of the line output stage. To protect the other electronic circuits if picture tube flash-overs should occur, each picture tube electrode has a resistor and a spark gap in order to protect the semi-conductors on the chassis from high voltage or currents. The video output stage is protected through the neon lamp GB01

2.6 Inputs and outputs

All inputs and outputs are connected to a connector K1 at the back of the monitor. From this connector is also available an unstabilized voltage of +24V.

2.7 Mains supply unit

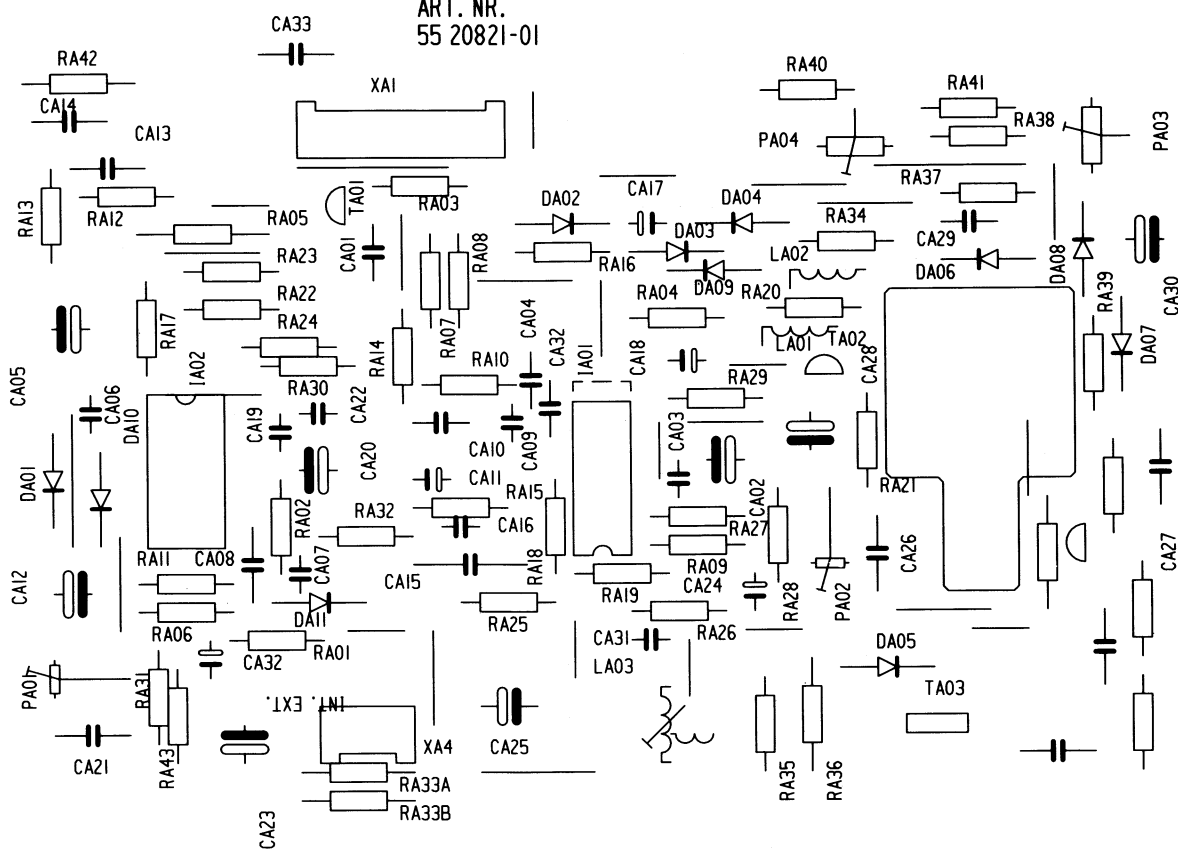
The monitor is designed to operate from a mains supply of 230,50Hz. It is fully mains separated with a full transformer having two separate secondary windings. One of these feeds the monitor via the stabilizer LM317, the output voltage of which is adjusted to +12V with PN01. The other secondary winding produces, after rectification, an unstabilized voltage of +24 V and supplies approx. 1,5 A.

2.8 High-resolution graphic displays

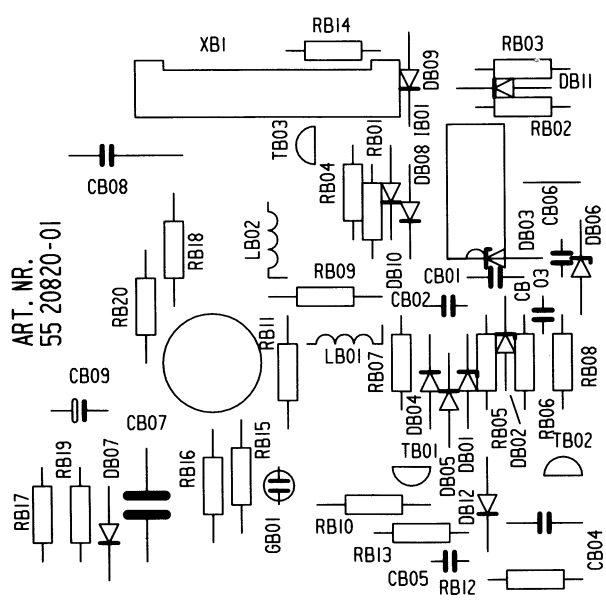
High-resolution graphic displays have the following picture heights and widths:

	Height (mm)	Width (mm)	W/H ratio	
ABC 810	185+2	225+2	1.2	
ABC 815	166+2	250+2	1.5	
ABC 816	107+2	160+2	1.5	80 character
	133+2	16+2	1.2	40 character

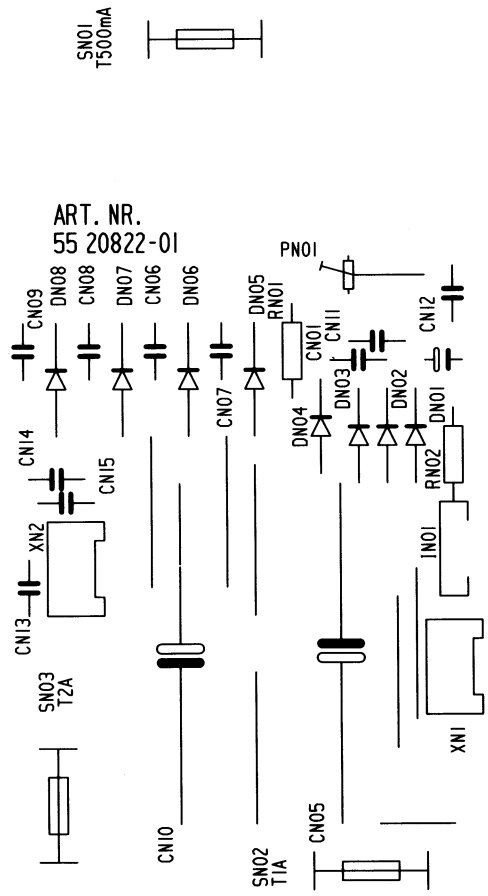
ART. NR.
55 20821-01



ART. NR.
55 20820-01



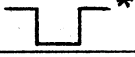



ART. NR.
55 20822-01



The Monitor Connector

XP-15

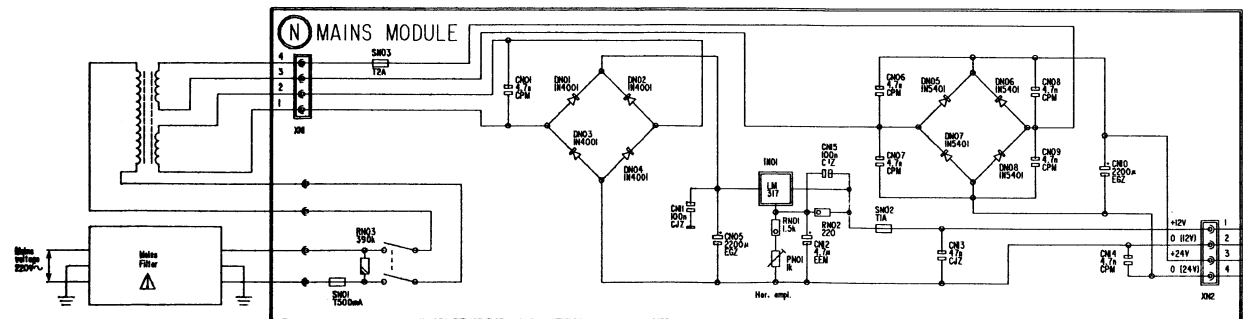
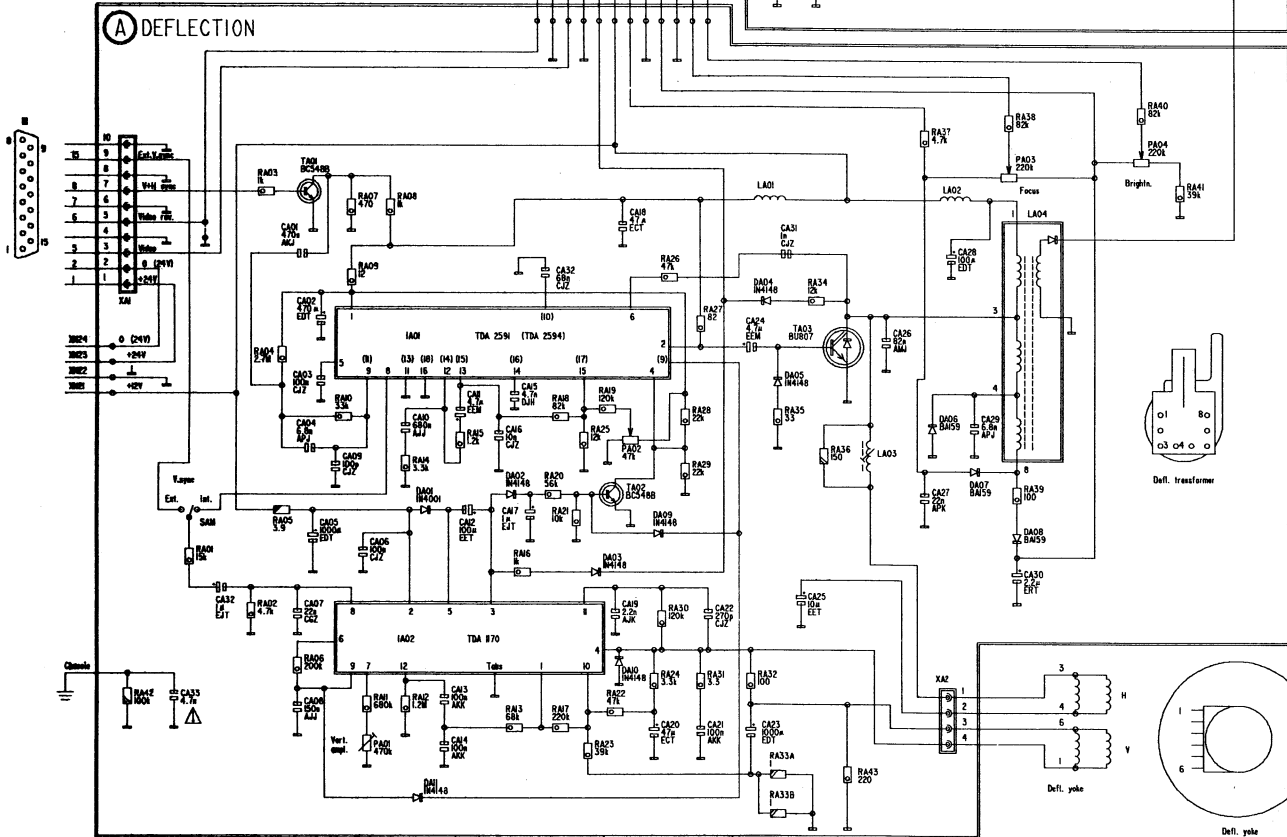
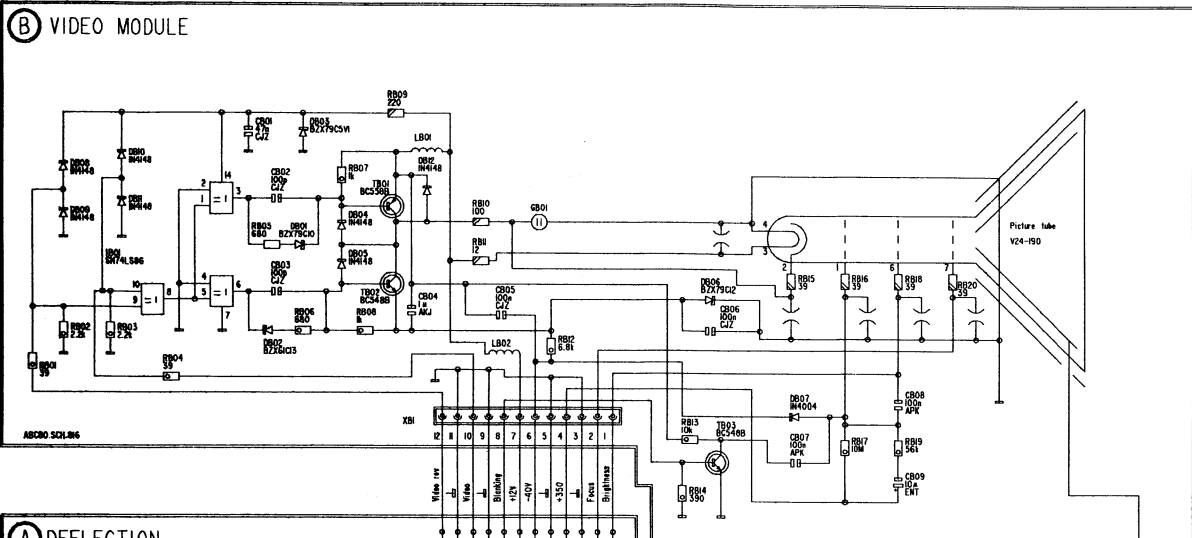
+ 17 - + 24 V	1
	
Dim/Reverse	3
Dim (level video 2)	4
Video 1 Digital	5
Video Reverse Digital	6
 Signal	7
H-Sync + V-Sync 	8
R	9
G	10
B	11
Sw Voltage 1 (1 V)	12
Sw Voltage 2 (12 V)	13
AF	14
V-Sync 	15

*Sync: If H-sync and V-sync signals are separated, they should be connected to the following pins:

- o H-sync - pin 8.
- o V-sync - pin 15.

Display unit ABC 816, part no 190 9412-15

Part no	Description
40 09206-02	Cabinet
41 09412-15	Front, marked ABC 816
40 09412-05	Front
44 96560-15	Back cover, 230V
44 20535-01	Grating for ventilation
65 00049-01	Picture tube V24-1900 TPE6L5C
55 20821-51	Deflection module
55 20820-51	Picture tube module
55 20822-51	Power supply module
59 20004-01	Mains filter
59 60073-01	Deflection coil
43 50029-04	Mains cable
64 50008-01	LM 317
53 30444-01	Foot
51 10798-10	Screw RXS B6 x 9.5 (foot)
51 10798-07	Screw B6 x 9.5



66 89412-01
MONITOR 10" 55 10820-01/821-01/822-01
ABC816
LUXOR DATORER AB, MOTALA

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