

1 General Description

There are three basic types of Display/Monitor Unit as follows:

- 180 Display Unit (High or Medium resolution)
- 250 Display Unit (High or Medium resolution)
- 340 Monitor Unit (Medium resolution)

The 180/250 Display Units comprise a monitor unit and a Processor Electronics Unit (PEU) fitted in a free-standing housing suitable for desk-mount operation, see Figures 3.1 and 3.2.

The separate 340 Monitor Unit is designed for mounting in a split-cabinet or customer specified console, see Figures 3.3 to 3.8.

Refer to Chapter 4 for details of Processor Electronics Units, and to Chapter 5 for details of individual control modules.

2 Unit Configurations

2.1 General Information

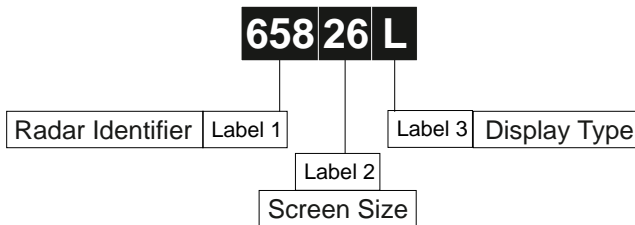
Display monitors are supplied according to the mounting requirement, i.e. Deck, Console (Kit) or Desk mounting.

- Deck - relates to a split-cabinet pedestal mounted display unit.
- Kit - relates to a screened monitor module for fitting into a customer specified console (supplied in kit form).
- Desk - relates to a desk mounted display unit.

The type of mounting (Display Type) is identified in the Monitor Unit's type number as follows.

2.2 Monitor Unit Type Numbers

The Monitor Unit type number consists of a five figure number (e.g. 65826) followed by a single letter suffix (e.g. L). A typical complete Monitor Unit Type Number may therefore be: 65826L. A further breakdown of the number is as follows.



Label 1 **BridgeMaster E Identifier (fixed as 658)**

Label 2 **Screen Size**

Label	Screen Diagonal
14	14" (180 series)
21	21" (250 series)
26	26" (340 series)

Display Monitor Units and Consoles
Label 3 **Display Type**

Label	Monitor Series	Mounting*	Resolution[#]	Buffered Video O/P
F	180/250	Desk	High	No
K	250	Desk	Medium	No
L	340	Deck	Medium	No
N	340	Kit	High	TBA
P	340	Kit	Medium	No
R	180/250	Desk	High	Yes
V	250	Desk	Medium	Yes
W	340	Deck	Medium	Yes
Z	340	Kit	Medium	Yes

***Deck** relates to the inclusion in pedestal (split-cabinet) mounted display unit.

Kit relates to a screened monitor module for fitting into a customer specified console.

Desk relates to inclusion in a desk mounted display unit.

[#]All display options are 'interlaced' and have the following resolution.

Resolution	Pixel Grid	Shadow Mask
High 180/250	1365 x 1024	Fine
Medium 250	1365 x 1024	Medium
High 340	1365 x 1024	Fine
Medium 340	1024 x 768	Medium

3 Installation and Commissioning

3.1 Installation

Note - In order to assemble the Display Units from their supplied parts, refer to the documentation supplied with the parts.

- Refer to Figures 3.1 for installing a 180 Display Unit.
- Refer to Figures 3.2 for installing a 250 Display Unit.
- Refer to Figures 3.3 for installing a 340 Split Cabinet.

3.1.1 340 Monitor Module

Note - In order to assemble the Split-Cabinet Console from their supplied parts, refer to the documentation supplied with the parts.

- Refer to Figures 3.4 to 3.8 for installing the 340 Monitor into a console.
- Refer to Figure 3.9 for information on interconnecting cables required to connect the 340 Monitor to the Processor Electronics Unit, and to connect the Brilliance Control Module to the Monitor.

3.2 Initialisation and Commissioning

The Display Monitor is only part of a complete BridgeMaster E Series Radar, and cannot be operated independently. For details of complete system installations refer to the BridgeMaster E, Ship's Manual 65800010B.

After a complete system has been installed it must be Initialised and Commissioned as detailed in Chapter 4 of the BridgeMaster E, Ship's Manual.

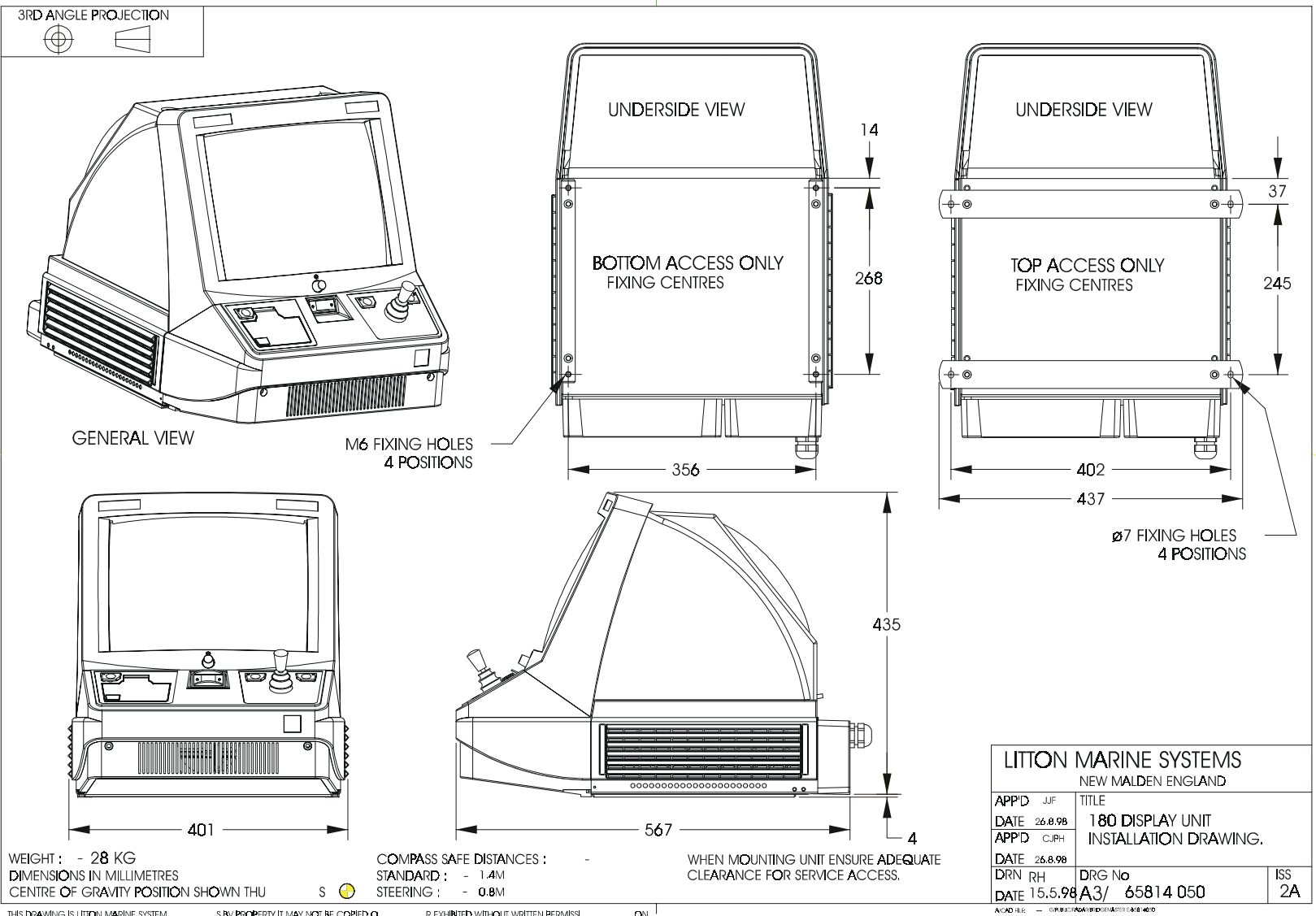


Figure 3.1 - 180 Display Unit Installation Drawing

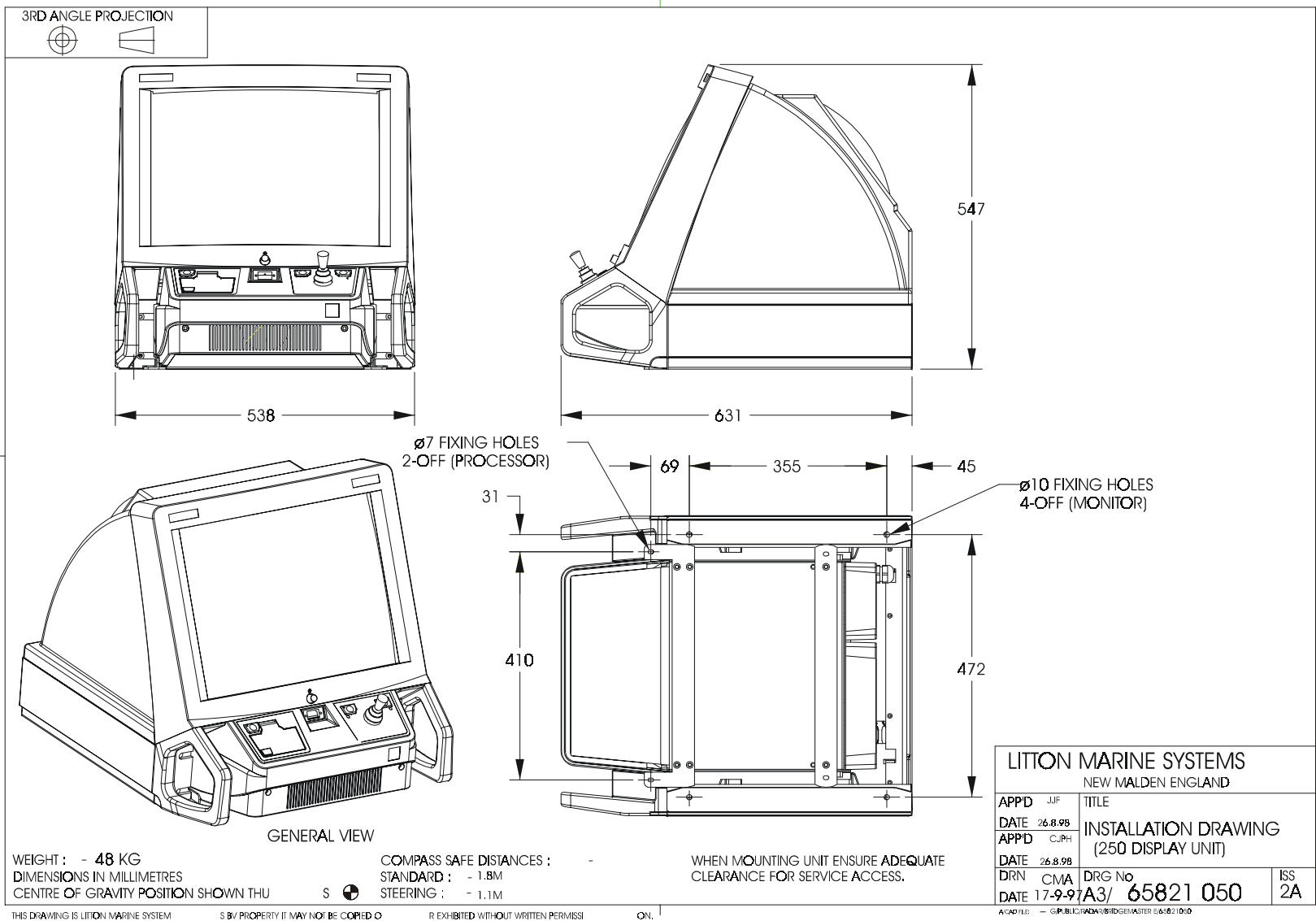


Figure 3.2 - 250 Display Unit Installation Drawing

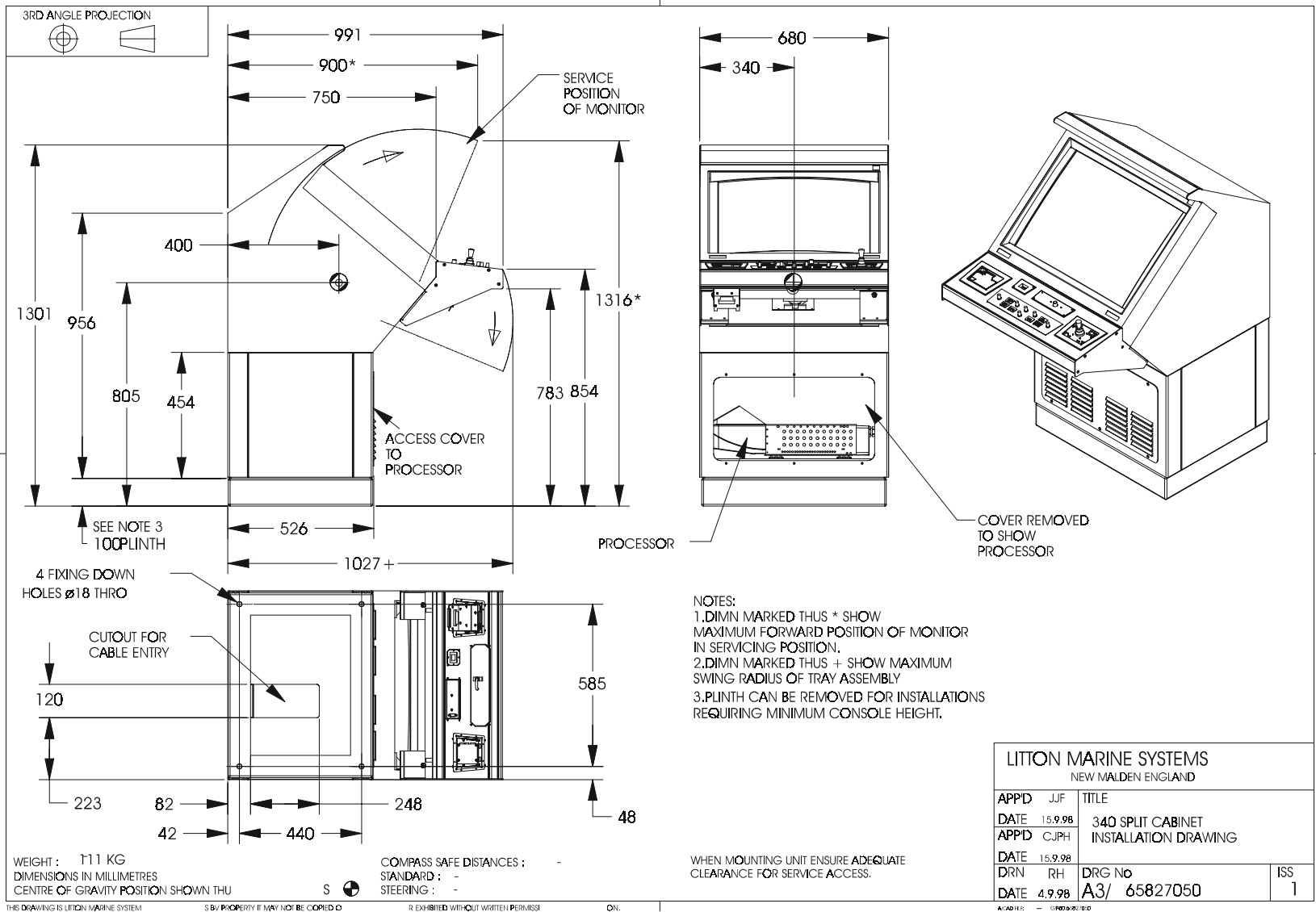


Figure 3.5 - 340 Split Cabinet Installation Drawing

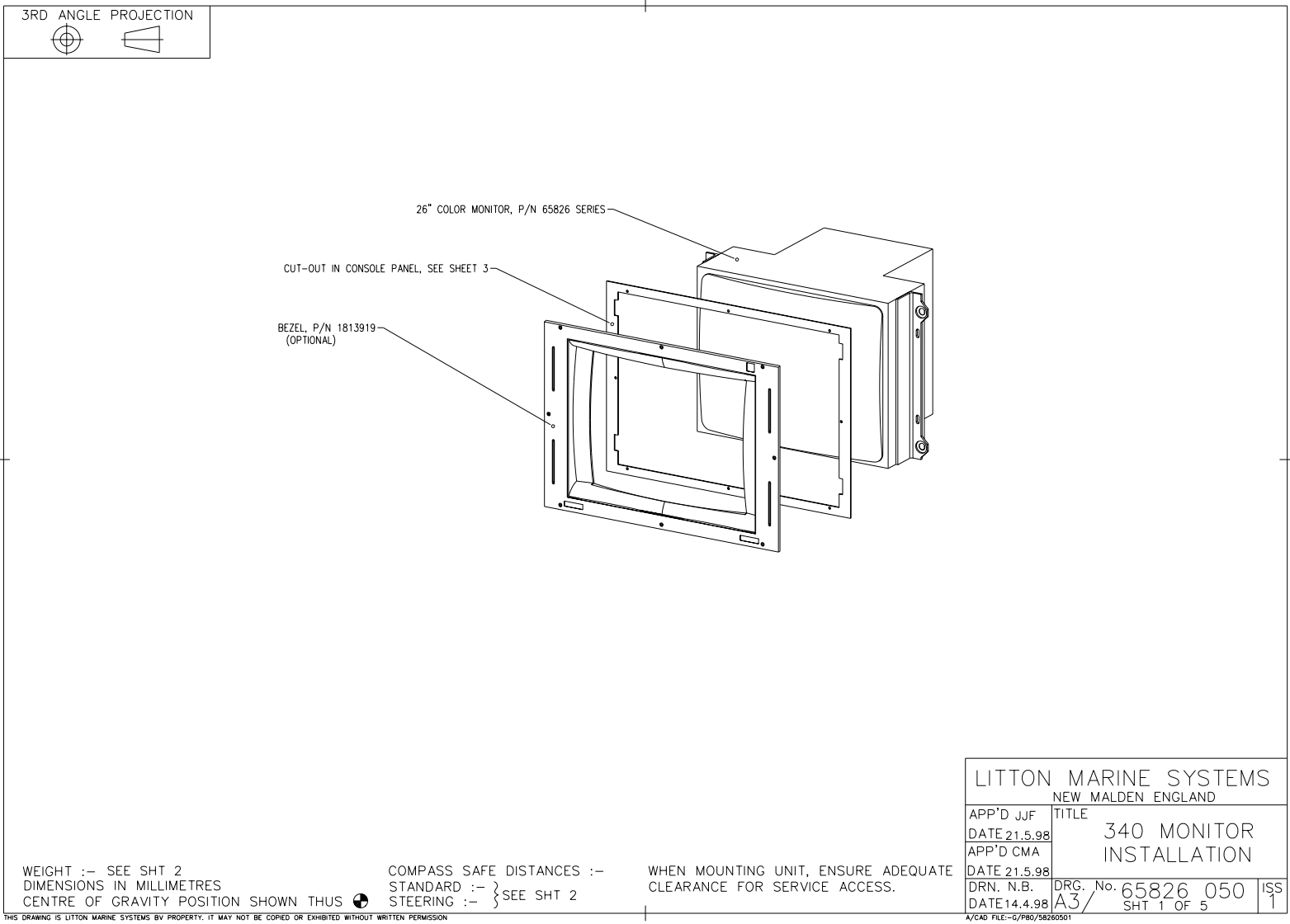


Figure 3.4 - 340 Monitor Installation (Sheet 1 of 5)

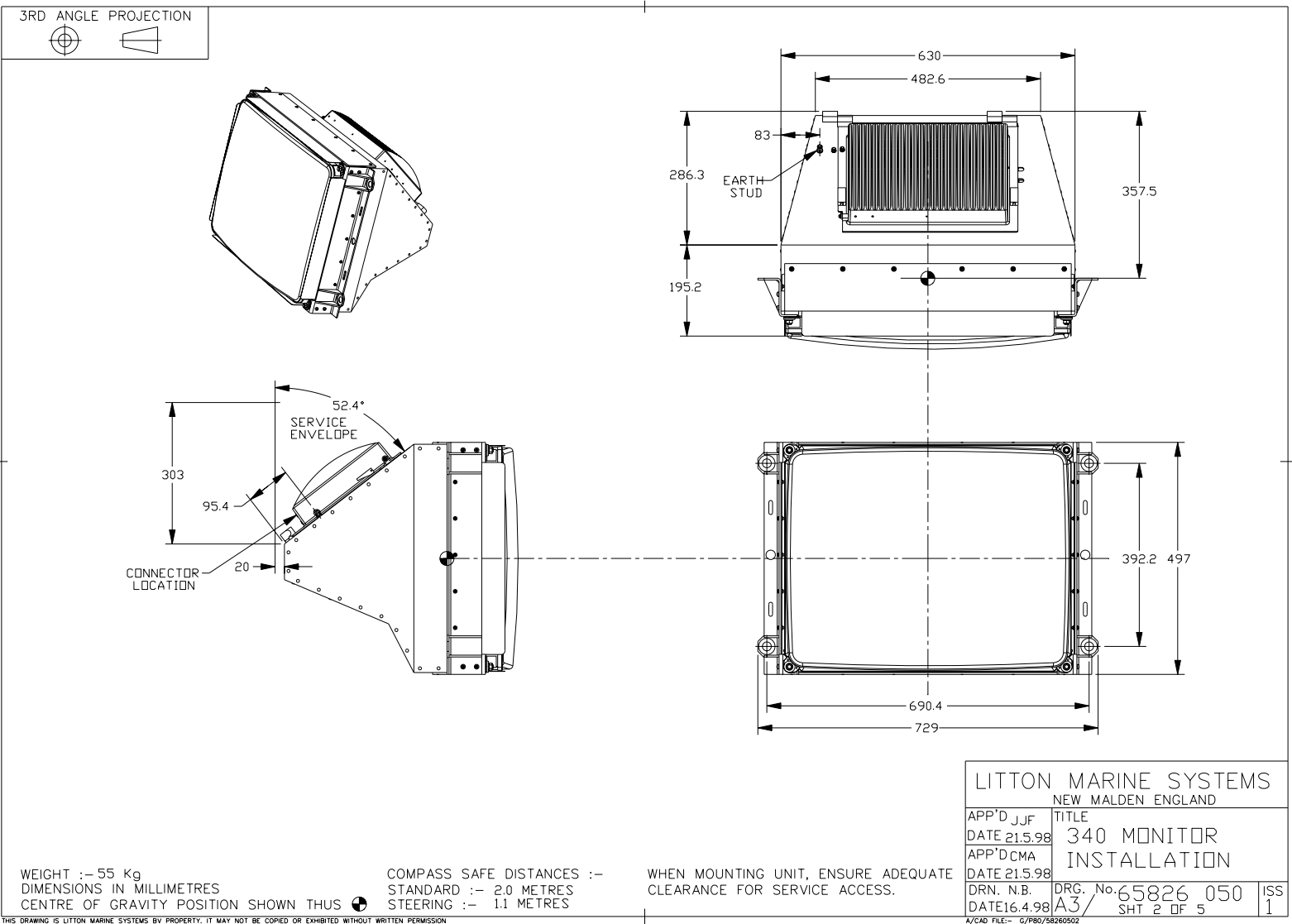


Figure 3.5 - 340 Monitor Installation (Sheet 2 of 5)

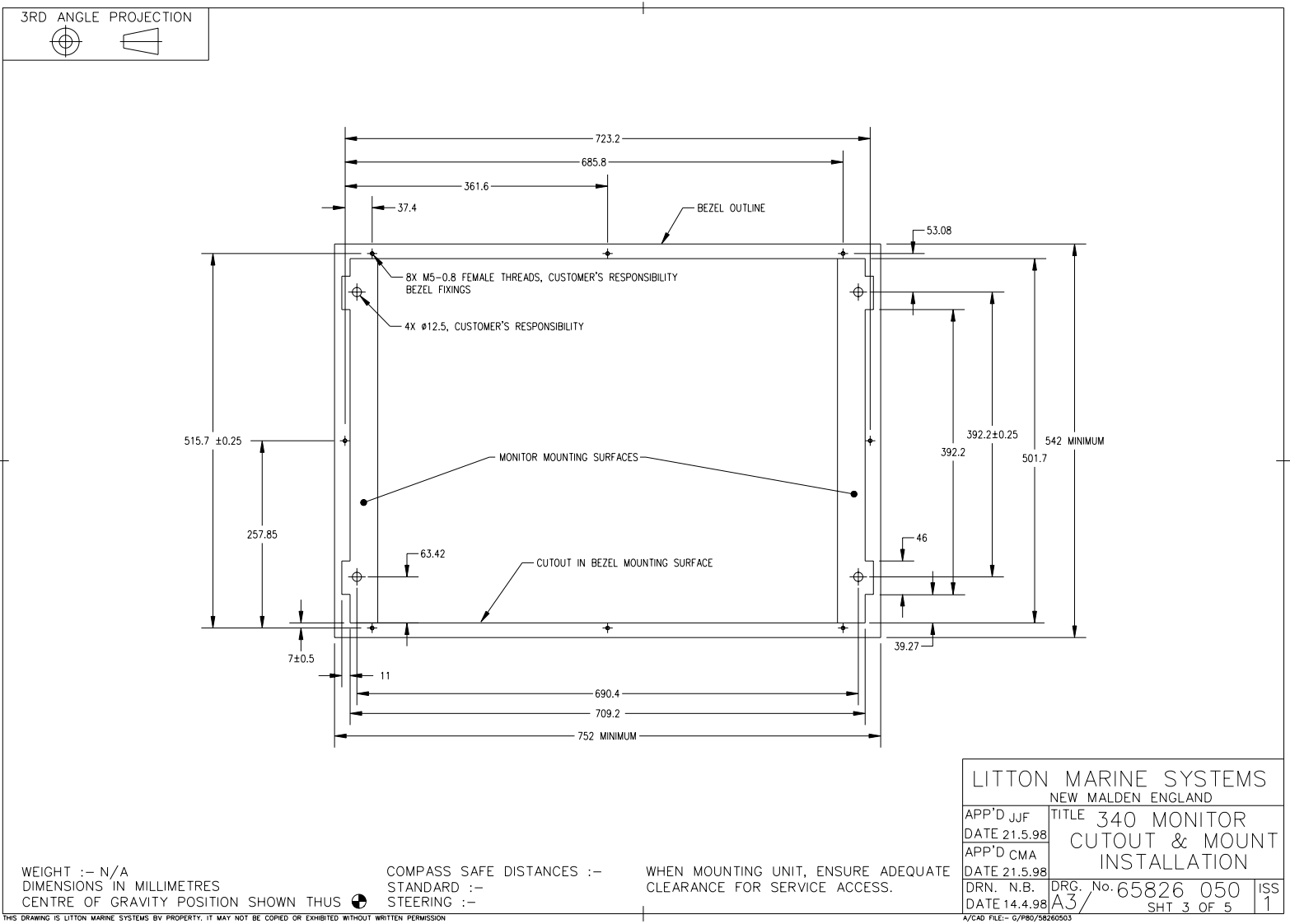


Figure 3.6 - 340 Monitor Installation (Sheet 3 of 5)

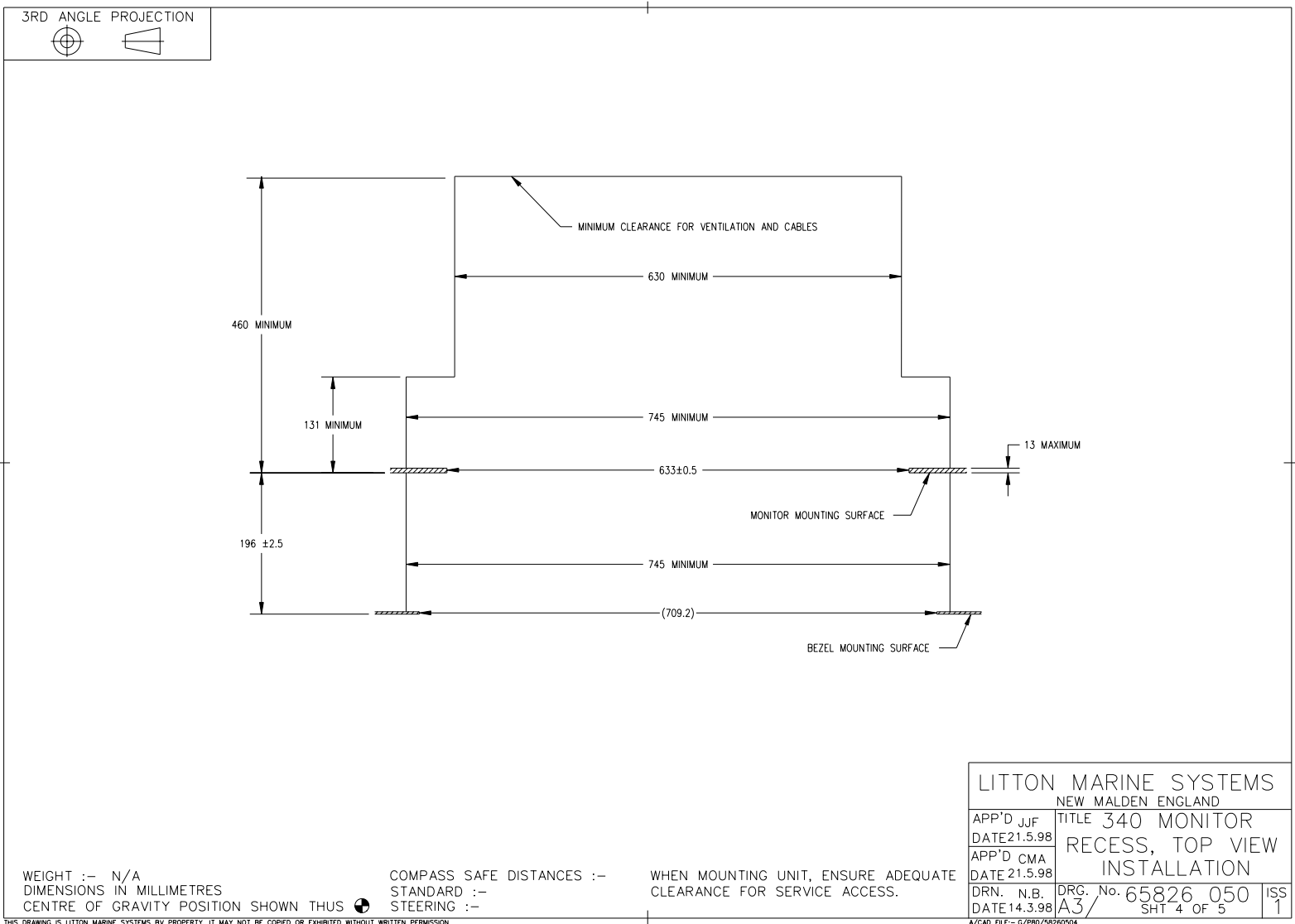


Figure 5.7 - 340 Monitor Installation (Sheet 4 of 5)

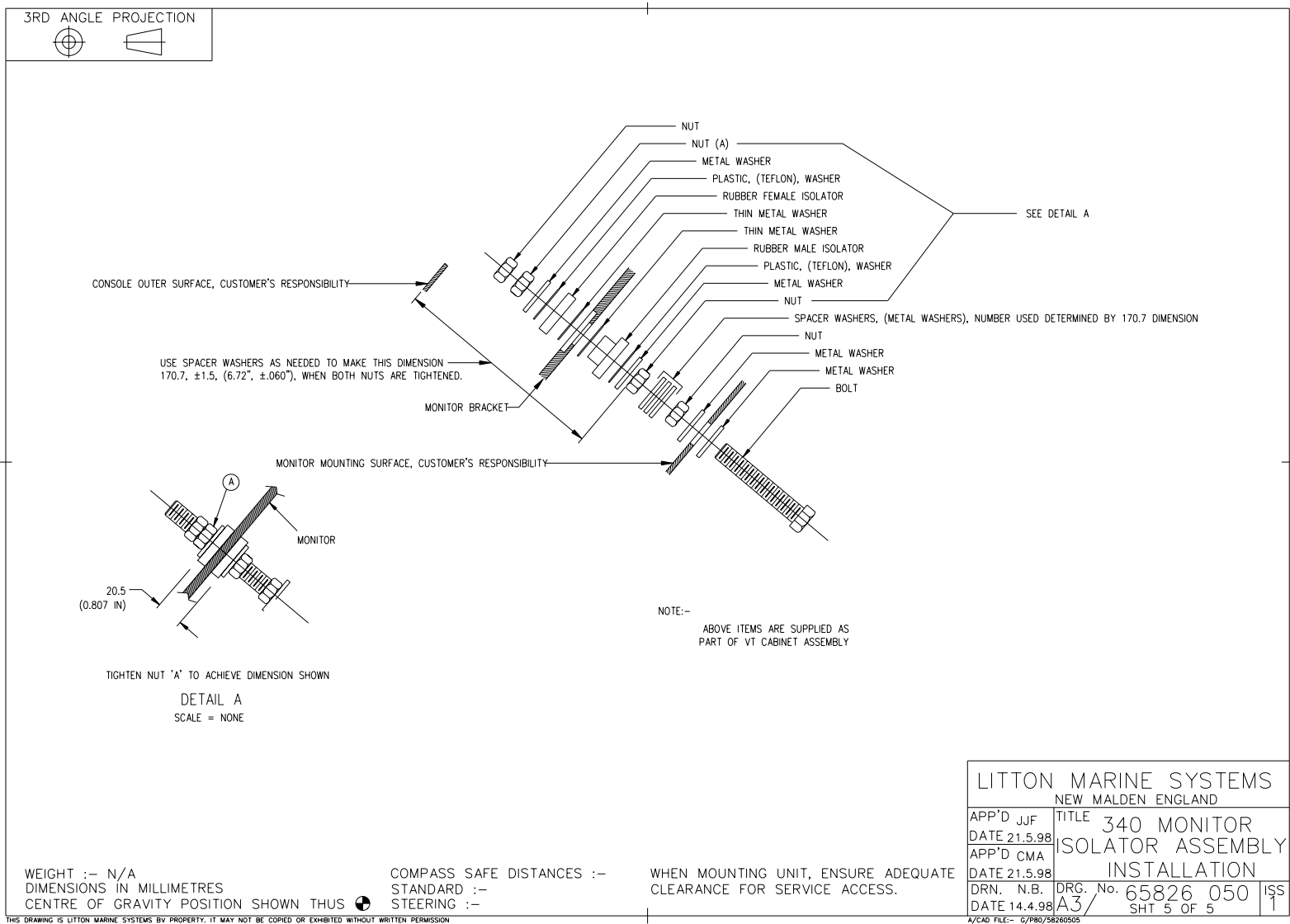


Figure 3.8 - 340 Monitor Installation (Sheet 5 of 5)

4 Technical Specification

4.1 Display Monitors

4.1.1 BridgeMaster E Display Monitors

Display Monitor Type: Colour Raster Scan, with 4:3 aspect ratio landscape mode picture format

Circle Size/ Resolution	Screen Diagonal (inches)	Radar Circle Diameter (mm)	Pixel Grid Size
180 High	14	180	1365 x 1024
250 Medium	21	250	1365 x 1024
250 High	21	250	1365 x 1024
340 Medium	29	340	1024 x 768

4.1.2 Non-BridgeMaster E Display Monitors

BridgeMaster E Display Monitors fitted with buffered video/sync outputs can be used to drive a suitable Company approved monitor as a secondary display.

A suitable Company approved monitor can also be used as the primary display. In this case, links in the video connection to the monitor are used to select the appropriate pixel grid size, and indicate the screen size to the Processor Electronics Unit.

Video signal characteristics conform to RS343A. A link option in the Processor Electronics Unit allows composite sync to be applied to the R, G and B outputs.

4.2 Video Processing

Parameter	Detail
Manual Control	Variable controls for gain, anti-clutter sea and anti-clutter rain.
Anti-clutter Auto	Advanced adaptive rain and sea clutter suppression circuits, applied without manual adjustment.
Enhance (echo stretch)	Operation available by selection on all ranges, with enhancement of targets over entire picture area except for a small area around the radar origin. Special circuitry for identifying weak/fading targets.
Multi-level Video	Radar video digitised at 16 levels. Scan integration employed at 16 levels and displayed at 8 levels on screen.
Picture Persistence/Trails	Medium persistence phosphor simulation with switchable true or relative motion trails, achieved by unique video processing.

4.3 Power Supplies

4.3.1 Power Supply (AC)

Parameter	Detail	
Input voltage range	92 - 276V RMS	
Input voltage frequency range	47 to 64 Hz.	
Maximum Input power	Display Units (including Monitor, Processor Unit and Controls)	
	180 Display	230 VA
	250 Display	260 VA
	340 Display	280 VA
Transient protection	Overvoltage transient of up to 40 % above nominal input voltage with maximum duration of one second. Pulse transient of up to ± 1200 V peak, with a rise time of 2 to 10 μ s and duration up to 20 μ s.	
Protection facilities	Output short circuit. High and low input voltage. Output overvoltage. Slow start.	
High voltage multiphase operation	Via a suitable transformer.	

4.3.2 Power Supply (DC)

Parameter	Detail	
Input voltage range	22 to 32 V DC	
Maximum Input power	180 Display Unit	230W
	250 Display Unit	260W
	340 Display	280W
Transient Protection	Symmetrical (line-line) 500 V of duration 10 μ s (100 μ s rise/fall time). Line to ground 500 V of duration 60 μ s (1 μ s rise/fall time)	
Protection Facilities	Output short circuit. High and low input voltage. Slow start.	

4.4 Mechanical Specification

4.4.1 Weights and Dimensions

Component	Height (mm)	Depth (mm)	Width (mm)	Weight (kg)
180 Display Unit	439	567	401	28
250 Display Unit	547	629	538	48
340 Display Unit -Deck Mounted	1301	991	680	111
340 Monitor Module	497	481	730	55

4.4.2 Mounting Options (340 Display)

The radar display components are either supplied in the form of a 340 Deck Mounted Display Unit, which incorporates a 340 Split Cabinet Display Console, or as a kit for fitting into a customer specified console (eg. VT750 console).

4.5 Compass Safe Distances

Component	Type No.	Standard	Steering
180 Display Unit	-	1.4 m	0.8 m
250 Display Unit	-	1.8 m	1.1 m
340 Display Unit - Deck Mounted	-	2.7 m	1.6 m
340 Monitor Module	65826 (P, Z)	2.0 m	1.1 m

4.6 Environmental Specification

To the requirements of the International Standard for Marine Navigational Equipment CEI/IEC 945 (1988) and Amendment 1 (1992).

5 Circuit Diagrams

The following circuit diagrams are included.

Circuit Diagram 65800922 - Display PSU (DC) given at Figure 3.9

Circuit Diagram 65800932 - Display PSU (AC) given at Figure 3.10

Refer to Chapter 4, Figure 4.4 for a basic 180, 250 and 340 Displays block diagram.

6 Replacement Spares

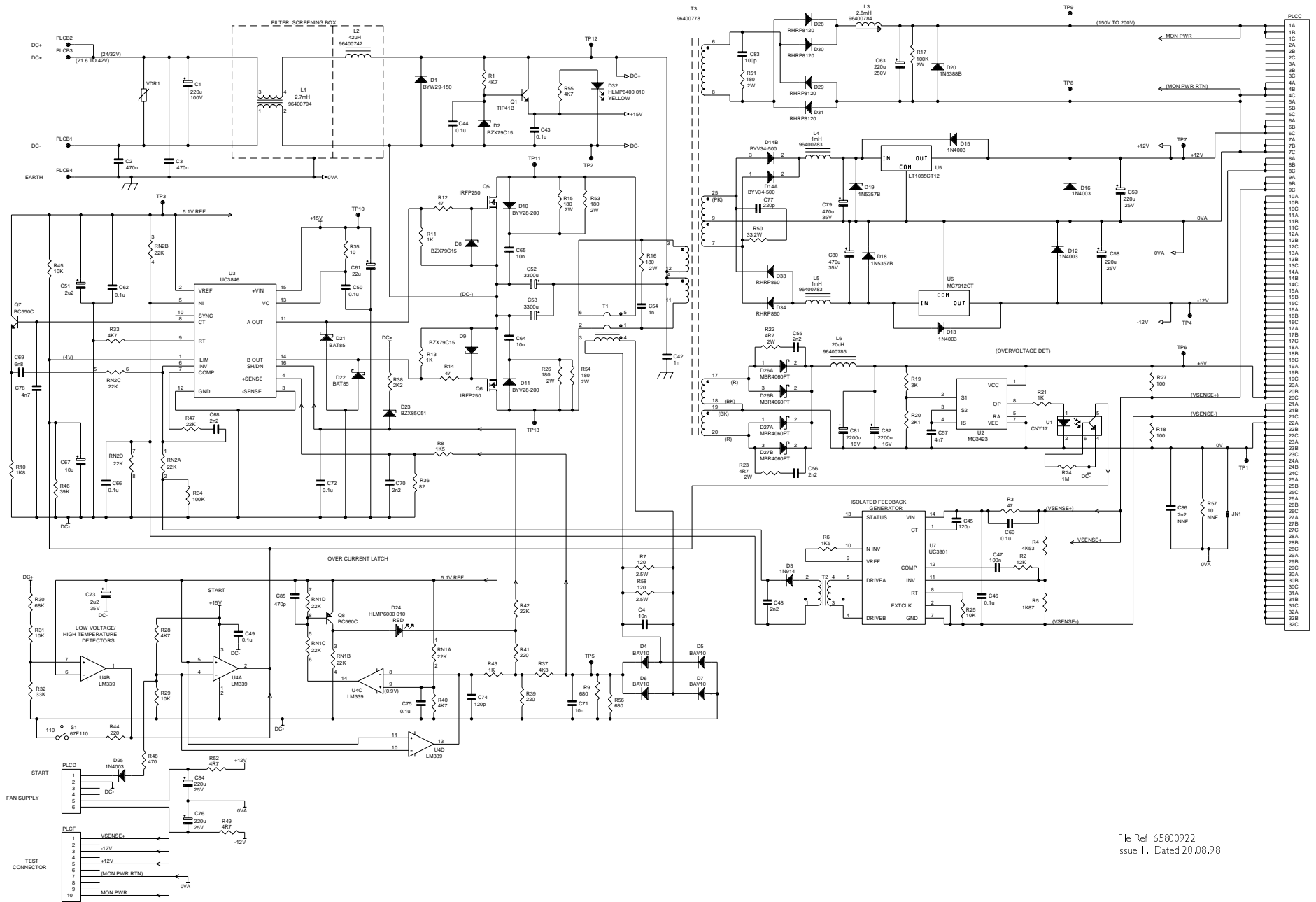
Refer to Chapter 6 for a full list of replacement spares.

7 Wiring Diagrams

Refer to Ship's Manual 65800010B Chapter 3 for complete system installation diagrams.

The wiring diagrams Included in this section are as follows:

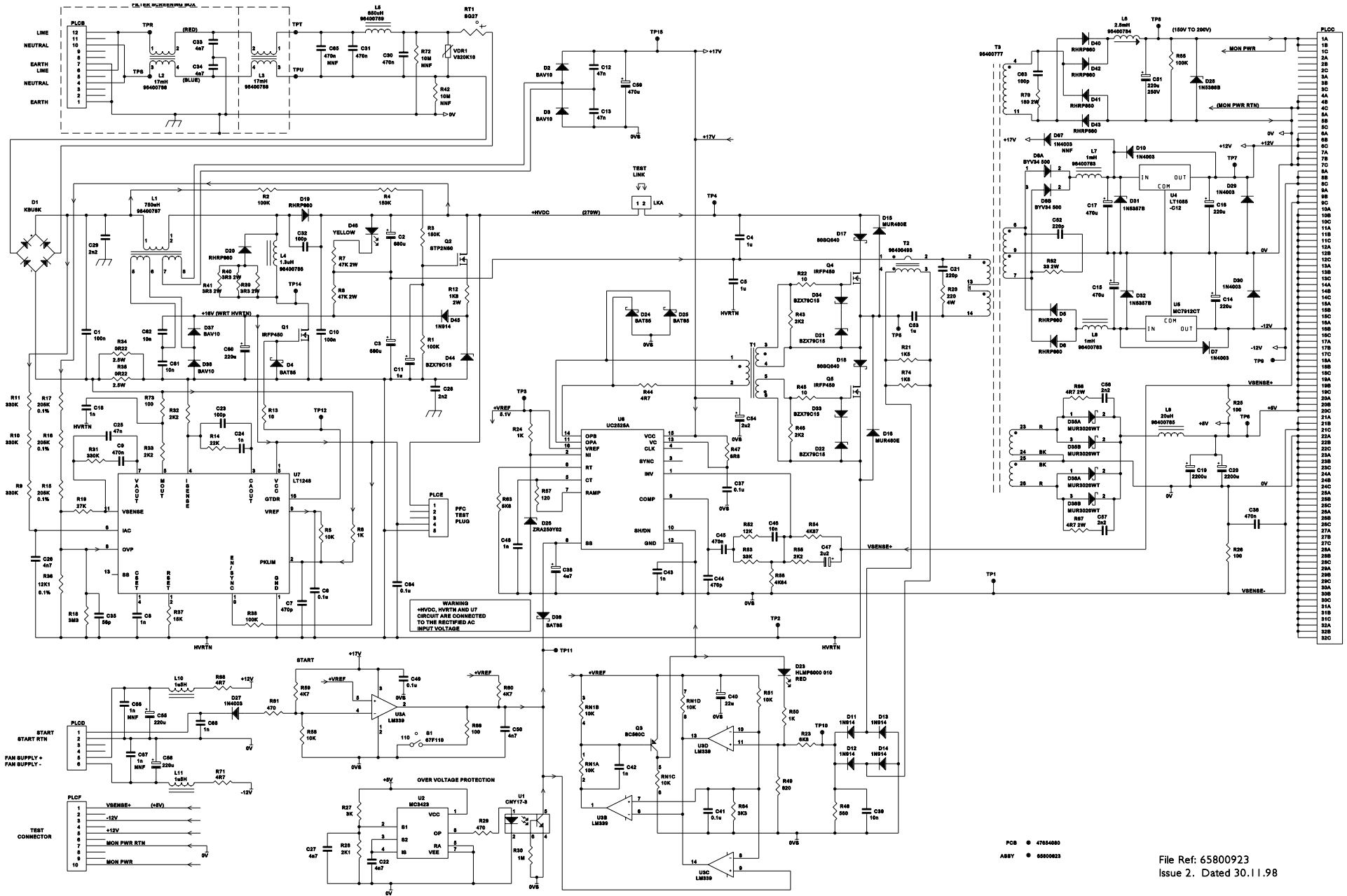
- Figure 3.11 Inter-unit Cabling: Non-Integral PEU Front Panel Connections
- Figure 3.12 Kit Display Unit Inter-Module Cabling
- Figure 3.13 Split Cabinet Display Unit Inter-Module Cabling
- Figure 3.14 Integral Display Unit Inter-Module Cabling.



File Ref: 65800922
Issue 1. Dated 20.08.98

Figure 3.9 Circuit Diagram 65800922 - Display PSU (DC)

A3 page 1-17/18 Figure 1.9, discard this A4 sheet.



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Figure 3.10 Circuit Diagram 6580923 - Display PSU (AC)

A3 page 1-19/20 Figure 1.10, discard this A4 sheet.

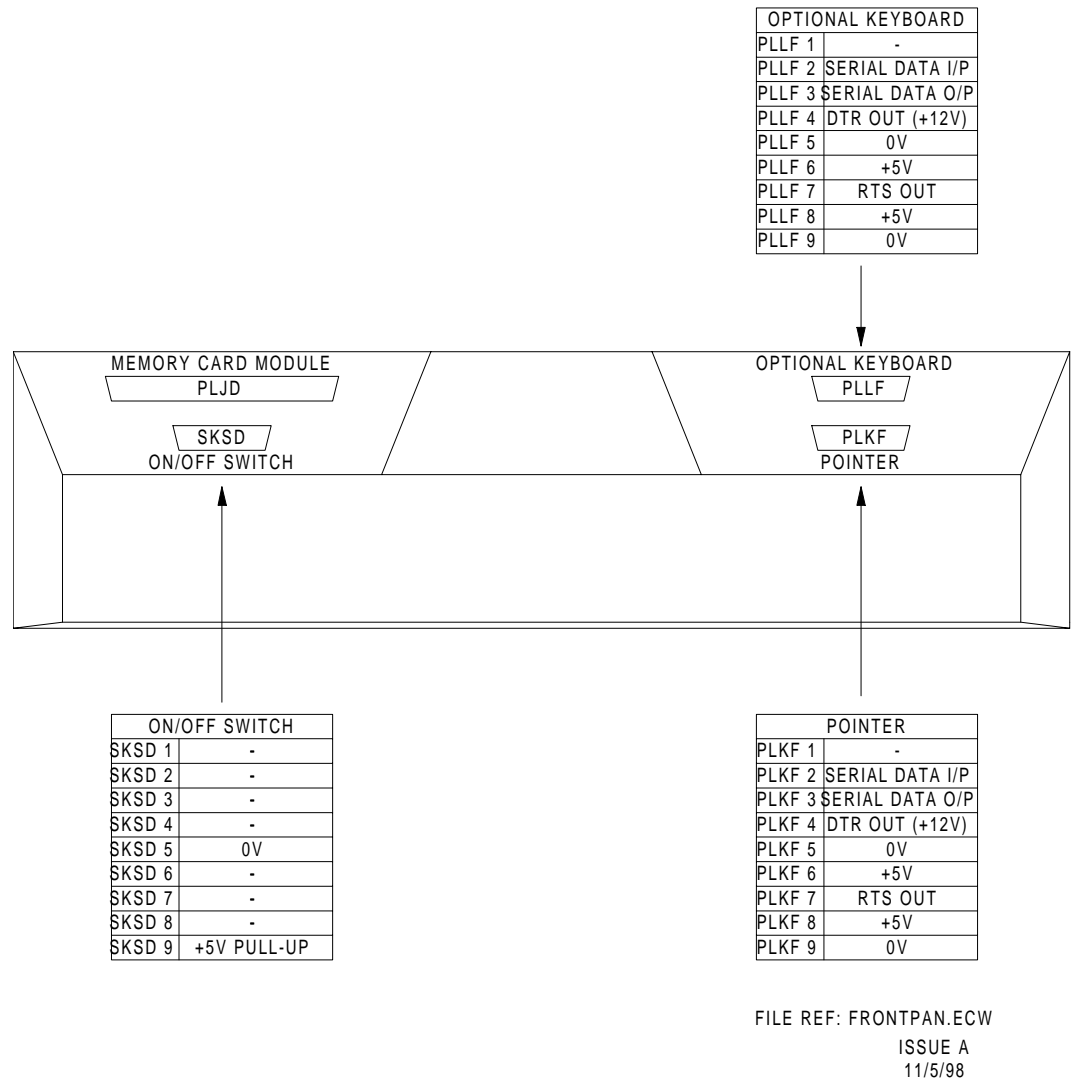


Figure 3.11 - Inter-unit Cabling: Non-Integral PEU Front Panel Connections

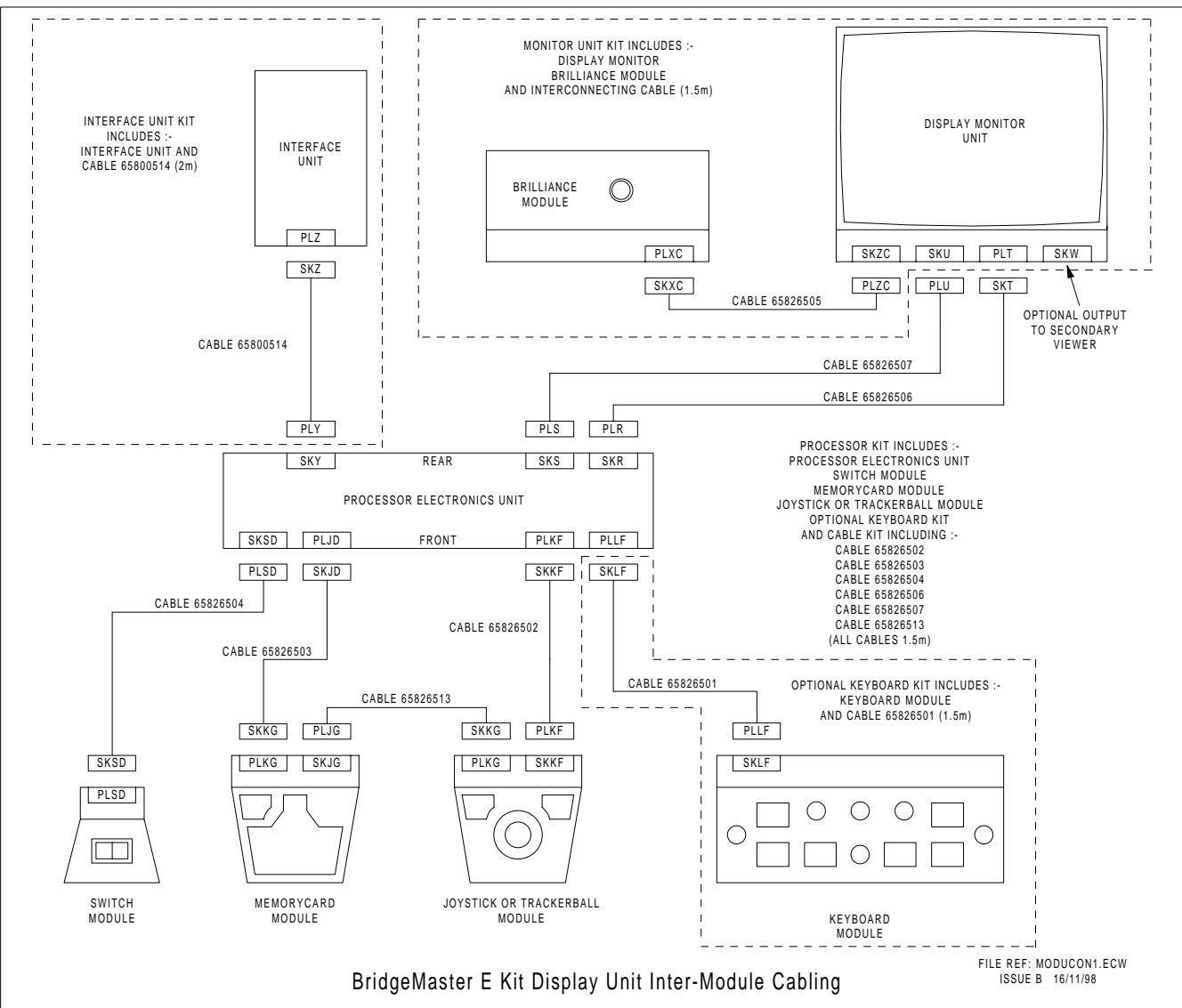


Figure 3.12 - Kit Display Unit Inter-Module Cabling

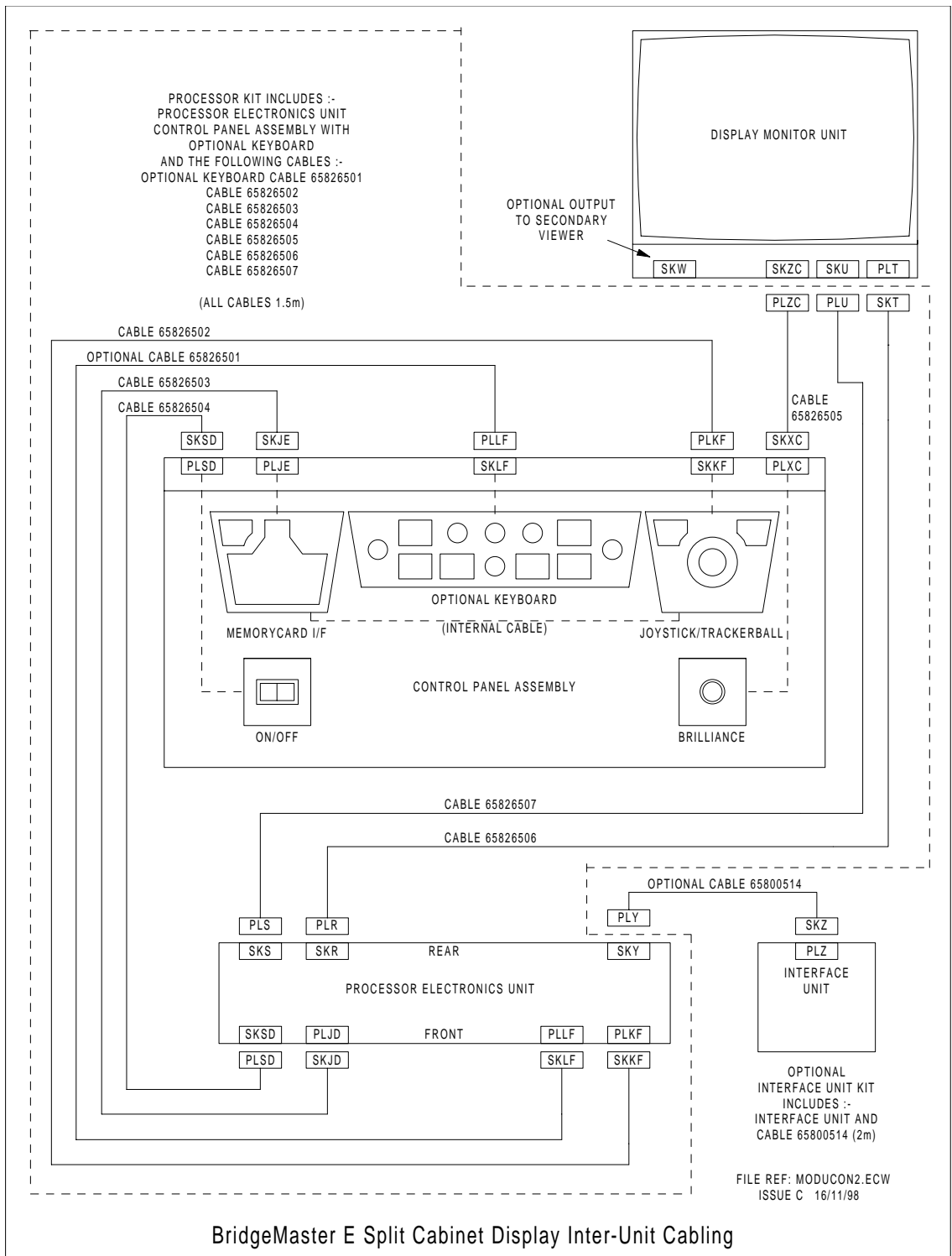


Figure 3.13 - Split Cabinet Display Unit Inter-Module Cabling

Chapter 3

Display Monitor Units and Consoles

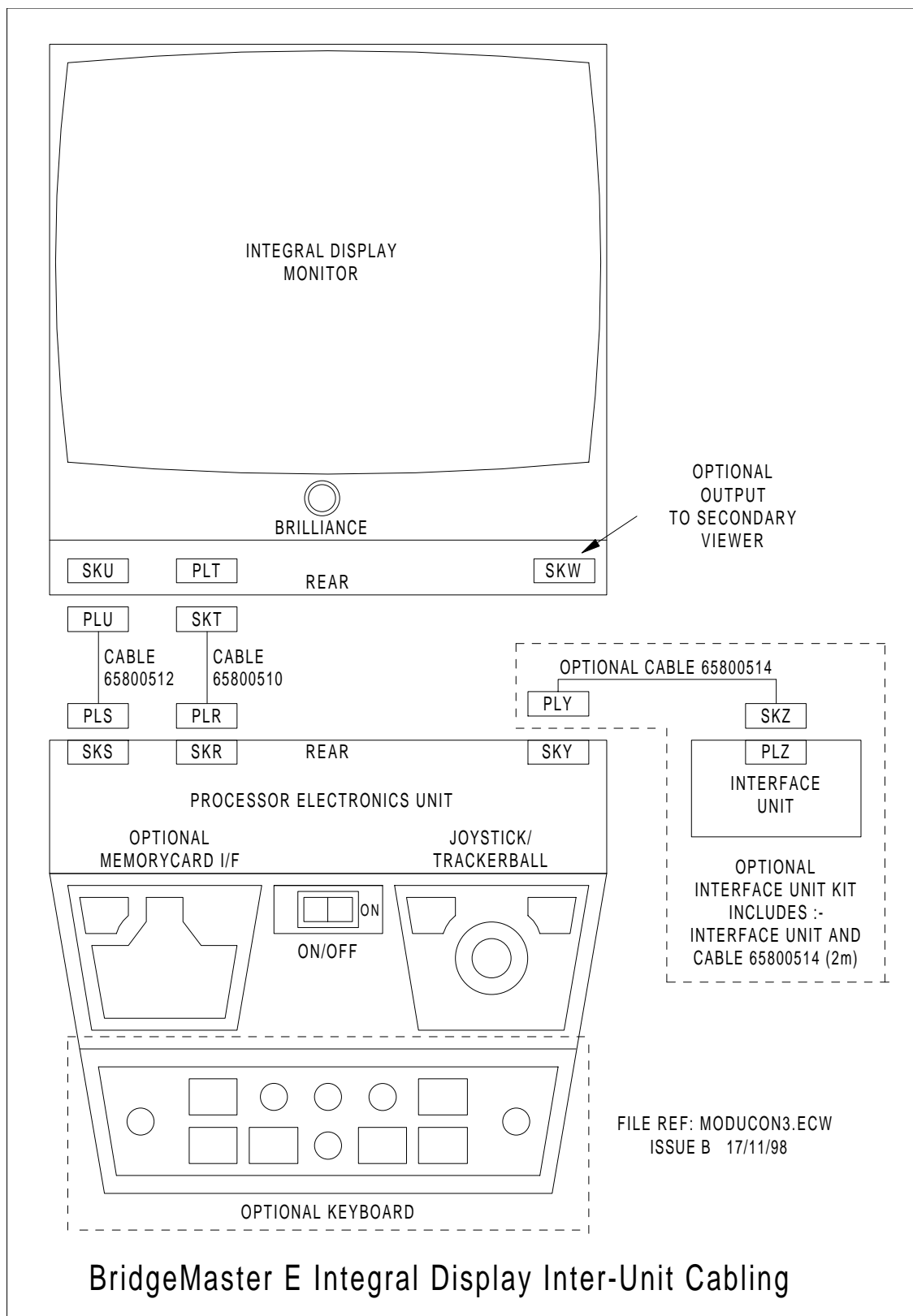


Figure 3.4 - Integral Display Unit Inter-Module Cabling