

417 Detection Electronics Bin

User Notes



Overview

The 417 and 417-T provide power, housing and shielding for all of the 400 Series modules.

Throughout the remainder of this manual the model number 417 is used to refer to both the full size 417 and three quarter width 417-T. The 417 will accommodate eight single width units or any combination adding up to the width of eight single units.

- Modules are loaded from the front and held in place by screws in the corners of the panels
- Unused positions are filled by blanks
- The 417 includes a fixed display section with both analogue and digital meters
- Connection between the modules and the 417 is made via a flying lead on the module which connects to one of eight connectors mounted on a motherboard at the rear of the 417
- For those wishing to add home-made modules to the 417, connectors and blank panels are available as spares.

Module Installation

Module	Unit Widths
415	1
218	1
485	2
228A	1
487	2
275	1
477	1
CPS0 (M)	2
DH-Py	1

The 417 will accommodate eight single width units or any combination adding up to the width of eight single units.

The 417-T will accommodate five single width units or any combination adding up to the width of five single units.

The following table shows the width of the 400 Series modules.

N.B. The display unit cannot be removed to make room for more modules.

Most 400 Series systems will be supplied as part of a light measurement system from Bentham. In these cases all the modules will already have been installed and the unit tested as a complete signal processing system.

If you are installing modules in an existing 417 you will need to consider the following

- Position of the module in the 417
- USB/ I2C connection.
- Power connection.
- Signal connection.

Remove the top panel of the 417 by unscrewing the two M4 socket head screws at the rear.

Remove the rear panel by unscrewing the four pozi-drive screws.

Module Position

There are no obligatory rules regarding the position of the individual modules within the bin but it is good practice to place the high current users at the right hand side, near the power supply, and the sensitive units at the left hand side away from the power supply.

On this basis the 215 and 218M usually occupy the extreme right hand positions. The 485 is usually placed on the right hand side of the any signal processing module.

USB/ I2C Interconnect

From the USB board, communication is over I2C in series. The I2C lead (on white two-pin connector) should route from the USB board to all programmable devices.

Power Connection

For power connection feed the connector attached to the flying lead on the module through the slot above the motherboard. Make connection to the nearest available connector on the motherboard. These connectors are polarised so they will only mate in one orientation.

Mains Connection

Mains connection is made via an IEC mains inlet mounted on the rear panel. A cable with IEC connector will be provided. For the UK, mainland Europe and the USA this cable will be terminated with the corresponding moulded mains plug. For other areas the cable end is left unterminated.

The 417 can be used with either 110V or 220V supplies provided that the mains selector is set accordingly. The selector is positioned behind the display panel at the right hand side of the bin.

The mains fuse is mounted in a drawer underneath the IEC mains inlet on the rear panel.

Mains Voltage (nominal)	Fuse Rating
110V	630mA anti-surge
220V	315mA anti-surge

Display

The display section of the 417 can be used to display the analogue output of the main amplifiers, the output of the high voltage power supply or the detector bias current setting of the 275. The rotary switch selects the function displayed as follows.

Switch Position	Function Displayed
A	Output of 225
B	Output of 2nd 225 if fitted
C	Output of 267
D	Output of 2nd 267 if fitted
E	None
F	Bias current setting of 275
HV	Setting of 215 high voltage

The display section includes both a 3½ digit dpm and a small analogue meter which are connected in parallel.

A BNC socket provides output of the function selected by the rotary switch. N.B. The output of the 215 high voltage power supply is not routed to this socket.

Power Supplies

The following power supplies are available in the 217.

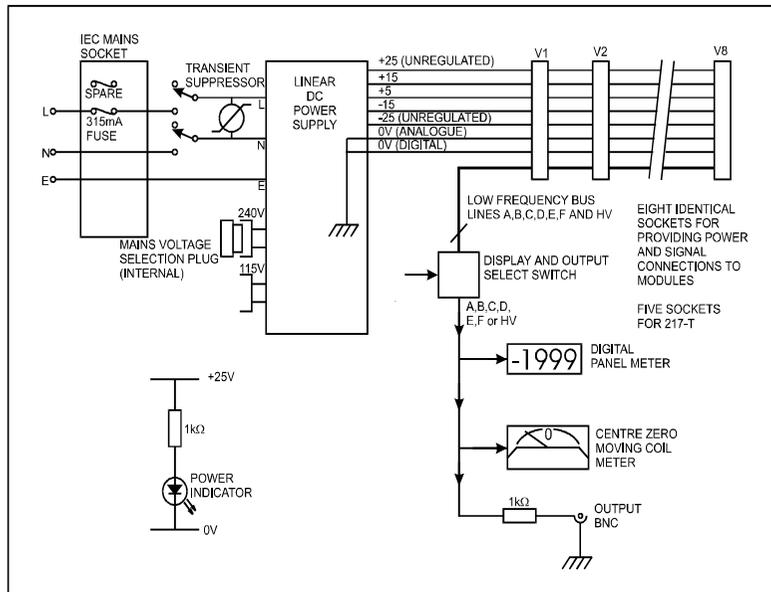
Mother-Board pin No.	Supply	Maximum Allowable Current Draw
1	+25V dc unregulated	1.0A
2	+15V dc regulated	1.0A
3	0V digital ground	-
8	0V analogue ground	-
11	+5V regulated	1.0A
12	-15V regulated	1.0A
13	-25V unregulated	1.0A

Those wishing to use the 417 with non-standard modules should ensure that the maximum allowable current is not exceeded for any of the power supply lines.

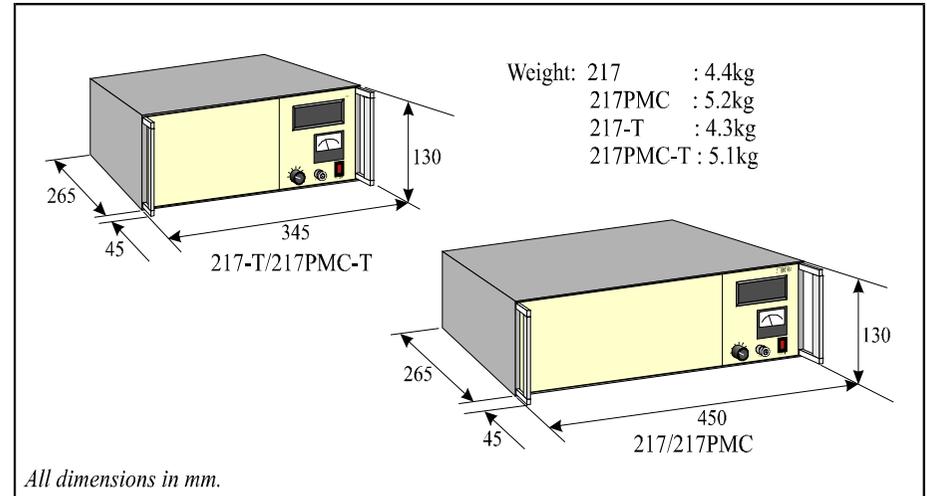
The currents used by the standard Bentham modules are shown below.

Module No.	+25V (mA)	+15V (mA)	+5V (mA)	-15V (mA)	-25V (mA)
215	100	-	-	-	-
218	100	-	-	-	-
485	-	100	300	100	-
228A	-	100	250	100	-
487	-	100	100	100	-
275	-	100	-	-	-
477	-	-	-	-	-
DH-Py	-	-	-	-	-

Block Diagram



Dimensions



WEEE statement:

Bentham are fully WEEE compliant, registration number is WEE/CB0003ZR. Should you need to dispose of our equipment please telephone 0113 385 4352 or 4356, quoting account number 135419.



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