



**ABBERFIELD**  
**INDUSTRIES**  
PTY LTD ABN 61 000 112 569

**C22PB**

**COIN  
ACCESS**  
**CAR PARK  
CONTROLLER**

Series 22 refers to those units of open construction, for building into equipment and incorporating front coin entry.

**SELF CONTAINED COIN VALIDATION AND CARPARK  
CONTROL IN ONE ROBUST HOUSING**

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## MODEL NUMBER DESCRIPTION

The generic product is named C22. (C for coin, 22 for the physical format). Suffix letters and numbers designate software and systems functionality. This brochure relates to a product for access control (boom gates etc) and consequently incorporates the suffix "BOOM".

The vast majority of products are the historic C22P BOOM (being superseded) and C22P2 BOOM, is its replacement. The fundamentals are similar, but now with an improved power supply.



**SELF CONTAINED COIN VALIDATION AND  
CARPARK CONTROL IN ONE  
ROBUST HOUSING**

## DESCRIPTION

**The coin validator / controller includes coin validation ability, power supply, display and system controller, all in one compact enclosure.**

The moulded polycarbonate housing protects all electronics and mechanical components, providing a robust product that can be installed and exchanged by non technical persons. The housing is designed to shed water from the inner workings mechanics, such that it may be used in outdoor unprotected locations. This environmental protection includes temperature compensation devices allowing use of the same product in both frigid and tropical environments.

## OPERATING PROGRAM

The primary function is to accept coins that accumulate to reach a programmable vend price and to output a relay pulse for operation of a boom gate etc. The program allows considerable "on site" or factory configuration of a wide range of parameters, some for non technical customer's use, others for field technicians and the balance for factory use.

### Boom Output

The boomgate output signal is adjustable for both the time of activation and the delay before activation.

## FEATURES

### Coins Validation

Coins are accurately discriminated for metal type and physical parameters. Also included are rate of fall measurements and confirmation of coin to bin sensors, to protect against system manipulation. 8 different types of coin can be accepted, allowing for all Australian denominations, as well as a token. Any of these coins can be eliminated by operation of DIP switches, positioned on the side of the validator. Alternatively the validator can be programmed to exclude any of these coins, or to substitute other coin denominations or multiples of tokens.

Calibration of a coin validator is done at time of manufacture, but it can be a field operation, without the use of special tools, or software programs. Calibration instructions are readily available on the Abberfield Industries internet site [www.abberfield.com.au](http://www.abberfield.com.au) under the Coin Validator section / Technical / C22 pdf.

### COIN INHIBIT

If an input to the validator is activated, then the acceptance of further coins will be inhibited. One use of this feature may be to prevent operation until a ground loop or similar is activated by a vehicle, which will "arm" the validator. Another application can be to close the car park when a car park full signal is received. When inhibiting the insertion of coins, the display will show either "**FULL**", "**OFF**" or "**ALL SOLD**", settable in parameters. The default setting is to show "**OFF**".

### CAR PARK COUNTING

This feature allows counting "in" and "out" of cars and on the car park reaching a preset value a relay is operated in the maintained condition, until car park numbers fall below the preset levels. This relay can be used to drive a car park full sign. In parameters the settings for the car park full levels can be adjusted at any time.

In the parameters setting, the coin validator / controller can be configured to optionally have, or not have, automatic coin inhibit, when the car park is full. In this case, the display would show "**FULL**".

If an Abberfield driveway stand is used it will most probably incorporate key protected "**Up**" and "**Down**" buttons to allow adjustment of the number of cars parked. Another button will allow the coin validator / controller display to change functionality, from coins in credit, to then show the number of cars parked, but only whilst the input is asserted and for an additional 5 seconds.

Another input will allow the clearing of totals to zero. One application can be for those car parks that are known to be empty overnight, being supplied this input from a time switch or other automatic or manual means.

The validator / controller can be configured for the "**up**" count to be triggered by the output relay, or to be internally actuated from the vend credit events. If configured for "**up**" count from the vend events, inputs can still be made into the "up" input as well. Input from a vehicle loop detector.

## PRICE 2 SELECT

Another input allows operation on a second vend price, which is independently set in the parameters. This is sometimes triggered by an external time switch, or manual switch, to provide peak and off peak parking fees.

## OVERRIDE

Also included is an override input, which opens the boom gate and leaves the display message as **“OPEN”**.

## AUDIT

An input is provided, usually for an external key switch, to initiate audit information being shown upon the display. There are two levels of audit counters, **resettable** and **non-resettable**. Usually the resettable counters are reset at time of coin clearance and hence should equate to the cash levels. The non-resettable counters will show the total transactions since the equipment was first installed.

## DATA RETRIEVAL

This allows the unit to display the number of operations at each price since the last resetting of the log data.

## MAIN LOG TABLE

- 1) If the Audit Log input is shorted momentarily or kept shorted, the display will show the **Normal data** log, with the omission of the **Gross revenue**.
- 2) If the Audit Log input is shorted twice in one second then the display will show the full data log, including the Gross revenue since the unit was installed.

## RESET MAIN LOG TABLE

When the display shows ‘End’ if the Audit log input is shorted again for more than 2 seconds then the **total** revenue and the **number of operations** for each price are reset to zero. The display will show **‘rSt’** acknowledging that the log data was reset. The **log number** will be incremented to next value. The short should be removed whilst the display shows **‘rSt’**

DISPLAY	FUNCTION
Log Number	Main log number (increments in reset)
"t0tAAAABB.BB"	"Total revenue since last data reset in the format \$AAAABB.BB"
Price 1: Price 2:	Number of vends Number of vends
End	

## CANCEL REMAINING CREDIT

Should coins in excess of the vend price be inserted the vend relay will operate and a balance credit remains. How this credit is allocated can be set in parameters.

There are three methods of handling credit remaining:

1. **Cancel remaining credit.**
2. **Leave credit remaining.**
3. **Cancel credit after a time period, this time period being adjustable in parameters.**

Most applications utilise the third option, but the default is the second option, unless otherwise specified at the time of order.

## POWER ON ERROR REPORT

At power up, the unit optics are checked. If an optic is found not to be working (due to components failure or optical blockage with dirt, jammed coin etc), an error message is displayed as shown below.

<b>Opt0</b>	Wake up	(off time)
<b>Opt1</b>	Diameter 1	(off time)
<b>Opt2</b>	Diameter 2	(off time)
<b>Opt3</b>	Cash box	(off time)

## ERROR MODE

Setting the 7th dip switch up to the **ON** position allows the display to show error messages for each coin deposited.

<b>nE20</b>	Width low
<b>nE21</b>	Width high
<b>nE22</b>	Coin masked by dip switch
<b>nE23</b>	Coin masked by coin value set to 00.00
<b>nE25</b>	Coin didn't enter cash box
<b>nE26</b>	Cash box opto blocked
<b>nE30</b>	Metal amplitude low
<b>nE31</b>	Metal amplitude high
<b>nE32</b>	Metal period low
<b>nE33</b>	Metal period high
<b>E34</b>	No match for all width, period and amplitudes
<b>E50</b>	Coin jammed, didn't follow sequence
<b>E99</b>	Coin metal response could not be measured.

N = coin number (1-8) on which the error occurred (i.e the nearest match).

Coin number guide 1 = 5c, 2 = 10c, 3 = 20c, 4 = 50c, 5 = \$1, 6 = \$2, 7 and 8 are reserved for tokens.

# ELECTRICAL

## Power Supply

The **C22P BOOM** operates on 240 volt or 12 volt ( this model is being superseded). The **C22P2 BOOM** operates on a high voltage from 80 volts to 260 volts, plus a low voltage supply of 12 volts. If the optional boost/buck regulator is fitted (Specify when ordering) the low voltage supply can be from 7 volts to 35 volts. The variable 12v input allows operation from battery supplies, even in their considerably depleted condition .

## Inputs/Outputs

The output relays are rated 10-amp at 240volt. For the coin validator / controller described in this application, only three relays are used. However the hardware can accommodate up to 8 relays, should additional functionality be required. One function can be to output multiple relays for any function, vend, sold out etc, to allow switching of multiple external hardware operations, on different voltages.

The incoming signal feed into the opto coupler inputs can be between 2 volts to 32 volts DC. AC inputs can be accommodated, although in some cases the hardware may need modification.

## Power Out

The coin validator / controller includes 12 volt DC power outputs, C22PBOOM is limited to 40 milliamp drain and the **C22P2 BOOM** is limited to 2 amps. This supply may be used to be switched by external hardware, to become the supply voltage to the validator / controller inputs.

The 12 volts out at 2 amps can be used to drive peripheral hardware. One example would be operating an Abberfield Industries note validator.

### COIN VALIDATORS

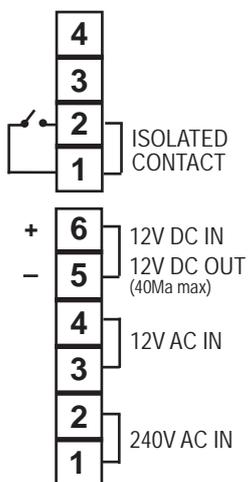
SERIES: 22

#### POWER SUPPLY

SERIAL NO. ....



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Remove Screw to disassemble

### COIN VALIDATORS

SERIES: 22P Boom Gate

SERIAL # .....  
PROGRAM .....  
VERSION .....  
BATCH # .....

#### INPUTS

12, 10, 24V AC - DC

12 - Reset car count

11 - Car park full

10 - Count decrement

9 - Count increment

8 - Common

7 - Boom gate

6 - Car park full

5 - Common

4 - Car park full

3 - Common

2 - Car park full

1 - Common

#### OUTPUTS

12 - 12V DC IN

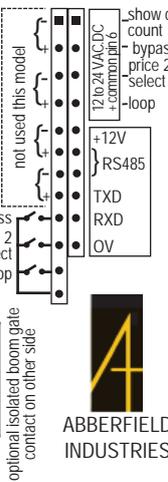
11 - 12V DC OUT (40Ma max)

10 - 12V AC IN

9 - 240V AC IN



SECURITY SCREW



not used this model

optional isolated boom gate contact on other side

#### SETTING PRICES

**Power off** - Set dip switches up.

**Power on** - Display shows PAR.

- Set dip switches down.
- Push SET button.
- PO on display (price one).
- Push SET button.
- Current price one on display (last digit flashing 00.0)
- To change push NEXT until new figure shown (0 to 9).
- Push SET
- (next digit flashes 00.0)
- Repeat above for all digits.
- Display returns to P0.
- Push NEXT for next price.
- Repeat above for price 2 (P0 to P1) P2, P3 and P5 are operating parameters, P4 sets car park capacity.
- When prices are set Power off
- Reset dip switches to operating position. Power on.

#### DIP SWITCHES

5c	10c	20c	50c	\$1.00	\$2.00	ERROR MODE	ON
VALIDATE						OFF	WIDE / NARROW

#### PUSH BUTTONS

○  
SET

○  
NEXT

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## PARAMETER SETTINGS

The following information is specific to the **BOOM** application program. More detailed. Information is available on Abberfield's internet site [www.abberfield.com.au](http://www.abberfield.com.au)

## PRICE PARAMETER ADJUSTMENTS

There are a number of parameters that can be adjusted and these are factory set. For vend prices; only Parameter P0 and P1 adjustment are for customer use.

**P0** – Normal price for Vend (Boom gate open)

**P1** – Price 2 for vend (requires, input signal to enable)

For further explanation of these parameters, to allow modification to meet specific customer requirements, refer to Abberfield Industries technical support team.

To change prices, **P0** and **P1** are the **ONLY** parameters a customer should need to change.

**Note:** You must complete steps 3-6 in 15 seconds or the unit will reset itself.

- 1) Remove supply power to the validator.
- 2) Set all dip switches to the up or eliminate position.
- 3) Turn power back on.
- 4) Display will settle on '**Par**' (Parameter Mode).
- 5) Put all dip switches in the down position.
- 6) Push the **SET** button, the display will read '**PO**' (Parameter O).
- 7) Push the **NEXT** button to select the parameter you wish to change (PO-P7).
- 8) When the display reads the parameter you wish to change push the **SET** button.
- 9) Display will show the current setting with the last digit flashing.
- 10) Push the **NEXT** button to change the number of the flashing digit. Push the **SET** button to select the next flashing digit.
- 11) Once you have stepped through all 4 digits the display will show the current parameter (PO-P7).
- 12) When all the parameters are set correctly, turn the power off.  
**Important: All dip switches should be in the down position (except for switch 7 if error mode indication is required).**
- 13) When dip switches are set correctly. Turn the power on.

## CAR PARK CAPACITY ADJUSTMENT

Car park capacity can be set in the programmable parameter.

To change the Car park Capacity (the number of cars in the park that cause the "full" relay to operate) **only** adjust **P4**.

Entering parameters is as described above, under **PRICE PARAMETER ADJUSTMENT**. Then step through to **P4** and adjust this parameter **only**.

## DATA INTERFACE

The base coin validator / controller has hardware input / output as described. An optional extra serial communication can be added, sometimes used to operate an Abberfield note validator or output to a serial printer etc.

**This can allow boom gate access by payment of coin and notes.**

Next generation coin validator/ controllers will incorporate:

- Ethernet**
- 2 x serial**
- 1 x 485**
- I<sup>2</sup>C**
- MDB**

## NOTE VALIDATOR

An Abberfield note validator can be driven from the coin validator / controller with no additional **external hardware**. The **BOOM** application code will then recognize cash received, whether this comes via coins or notes inserted.

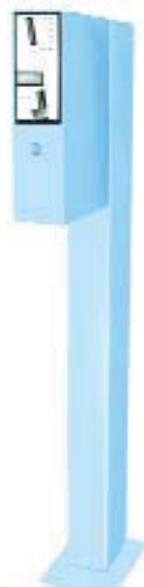
## SUPPORT HARDWARE

### DRIVEWAY STANDS

Abberfield Industries have a range of driveway stands to accept the 22 series coin validator/ controller, refer to [www.abberfield.com.au](http://www.abberfield.com.au) Car Park section / Driveway Stands pdf.



RH 20/22  
High Security



PS 20/22  
Low Security



DS 20/22  
Extra High Security

# TOKENS

Abberfield Industries produce three sizes of tokens, which can be made in different metal and surface treatment, and the validator distinguishes between identically sized but different metal type tokens. Embossing of tokens to customers details can be provided, visit [www.abberfield.com.au](http://www.abberfield.com.au). **Products / Tokens section.**



## FURTHER READINGS

Full technical information on **C22PB** is available on our internet site [www.abberfield.com.au](http://www.abberfield.com.au) **Coin Validators / Technical / C22 Series Coin Validators.**