RANGE SERVANT®

BA16

Introduction

BA16 is a control system intended for use with Range Servant's Ultima and RS series of ball dispensers. It offers up to six separate payment inputs (channels) and allows for ball amounts to be adjusted for each channel. It also offers connection to smart payment systems as well as connection to Range Servant's ConnectedCare maintenance system.

Connections

WARNING: Make sure the dispenser is disconnected from Mains power before doing any work on below connections!

Low voltage connections

Pay Channels	
Terminal	Explanation
P1 – P6	Pay channels for payment devices. One pulse will dispense the amount of balls set in the Menu system. For a pulse to be recognised it needs to be at least 100ms and close to Ground (G).
G	Ground point. All G's on the board are of same electrical potential.
+	12V DC power supply. A maximum of 2Amps is allowed for external devices.
R	Ground with 1KOhms in series.
D	Dispense output. Goes low when dispensing. (used for red front dispense light)

Sensor Connector	
Terminal	Explanation
G	Ground for ball counting sensor (or cradle position on RS dispensers)
IN	Pulse input from sensor
+	12V Power supply for sensor

Dispense Motor Connector (Ultima dispensers only)	
Terminal	Explanation
+	Dispense motor positive
-	Dispense motor negative
B	Blocking signal. 100Ohms in series to ground, active while dispensing

Power Supply Input	
Terminal	Explanation
-	Ground from Power supply
+	12V DC from Power supply

Digital Expansion headers	
Terminal	Explanation
PAYMENT	Used by smart payment systems to digitally control the amount of balls to dispense
STATUS	Used for data capturing devices, for example *Range Servant ConnectedCare*

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Mains voltage connections

WARNING: Only persons with sufficient knowledge and certifications are allowed to handle any Mains voltage connections! Always consult a certified electrician before attempting any work on these connections!

WARNING: As the system normally connects to a wall outlet and some countries use non-polarised plugs you can NOT rely on any input/output being Neutral or Live even though its designation says so!

Mains out to power supply	
Terminal	Explanation
N	Mains Neutral to power supply. Controlled by Power switch and protected by fuse.
L	Mains Live to power supply. Controlled by Power switch and protected by fuse.

Mains supply (motor, water switch etc.)	
Terminal	Explanation
DL	Water valve mains Live output (Controlled by “water on” switch)
DN	Water valve mains Neutral output (Controlled by “water on” switch)
DL	Dispense motor mains Live output (RS dispensers only)
DN	Dispense motor mains Neutral output (RS dispensers only)
IL	Mains Live output when NOT dispensing
IN	Mains Neutral output when NOT dispensing
SL	Mains Live output (for accessories). Controlled by Power switch and protected by fuse.
SN	Mains Neutral output (for accessories), Controlled by Power switch and protected by fuse.

Mains input	
Terminal	Explanation
L	Mains Live input
N	Mains Neutral input

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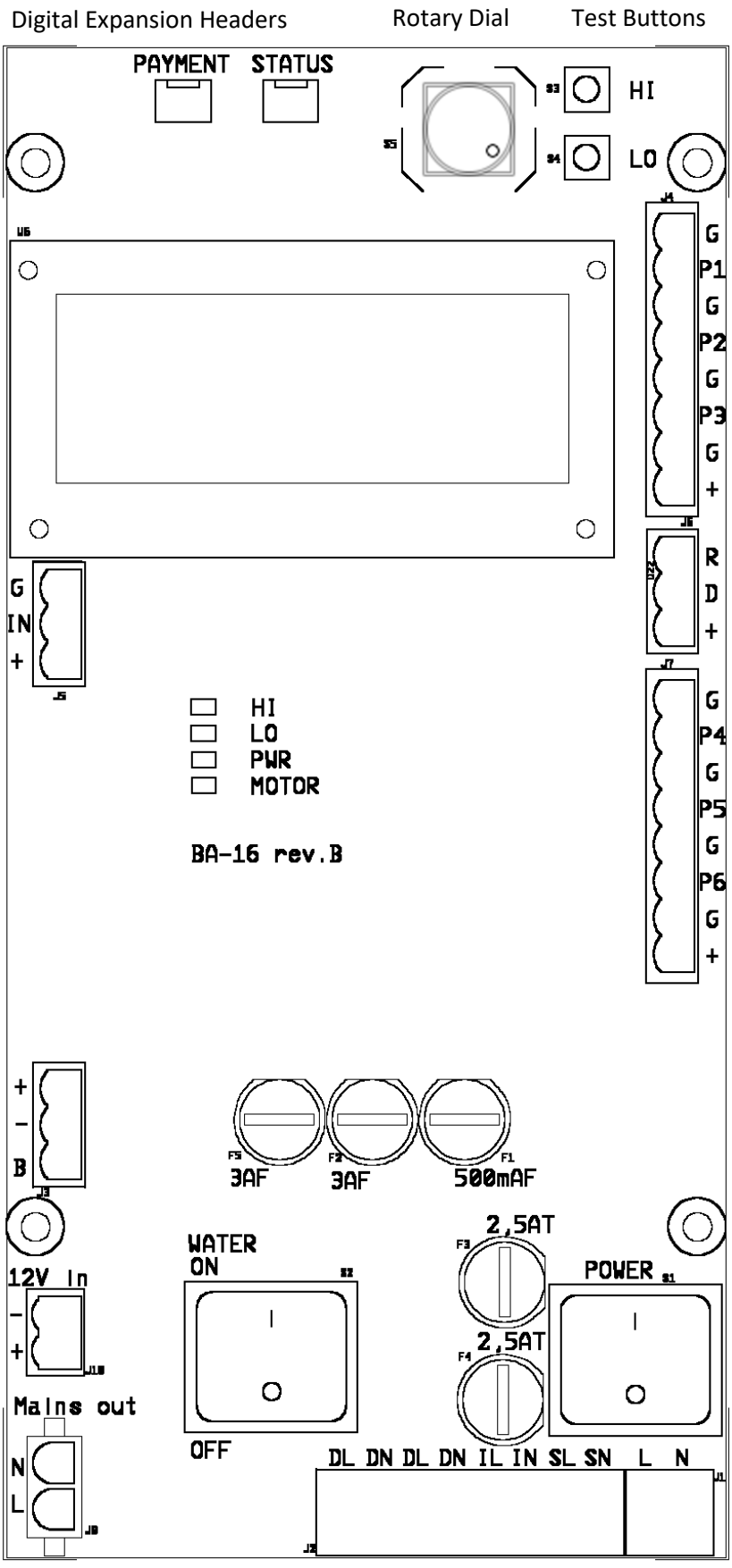
Board Overview



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Menu System

The menu system is operated using the Rotary Dial. To display the menu, turn the Dial clockwise. Navigate the menu by turning the Dial clockwise or anti-clockwise.
To edit a menu item 'click' the dial by pressing it inwards towards the circuit board until it clicks. Adjustments to the value is made by turning the Dial clockwise (increase) or anti-clockwise (decrease). Once desired value is achieved click the dial again to save the new value.
The display will go back into standby after some time of inactivity.

Menu items

- Speed Lo
  This value adjusts the speed of the motor when there are five balls or less left to dispense. This is to make sure the motor has time to stop once correct ball amount is achieved.
  Default value: 20
- Speed Hi
  This value adjusts the speed of the motor when running at full speed.
  Default value: 100
- Pay 1
  Sets the amount of balls to dispense when a pulse is given on Pay Channel 1
- Pay 2
  Sets the amount of balls to dispense when a pulse is given on Pay Channel 2
- Pay 3
  Sets the amount of balls to dispense when a pulse is given on Pay Channel 3
- Pay 4
  Sets the amount of balls to dispense when a pulse is given on Pay Channel 4
- Pay 5
  Sets the amount of balls to dispense when a pulse is given on Pay Channel 5
- Pay 6
  Sets the amount of balls to dispense when a pulse is given on Pay Channel 6