Install and Set-Up Manual for WA-x-S Series Washers

WA-5-S, WA-10-S, WA-25-S

August 2023

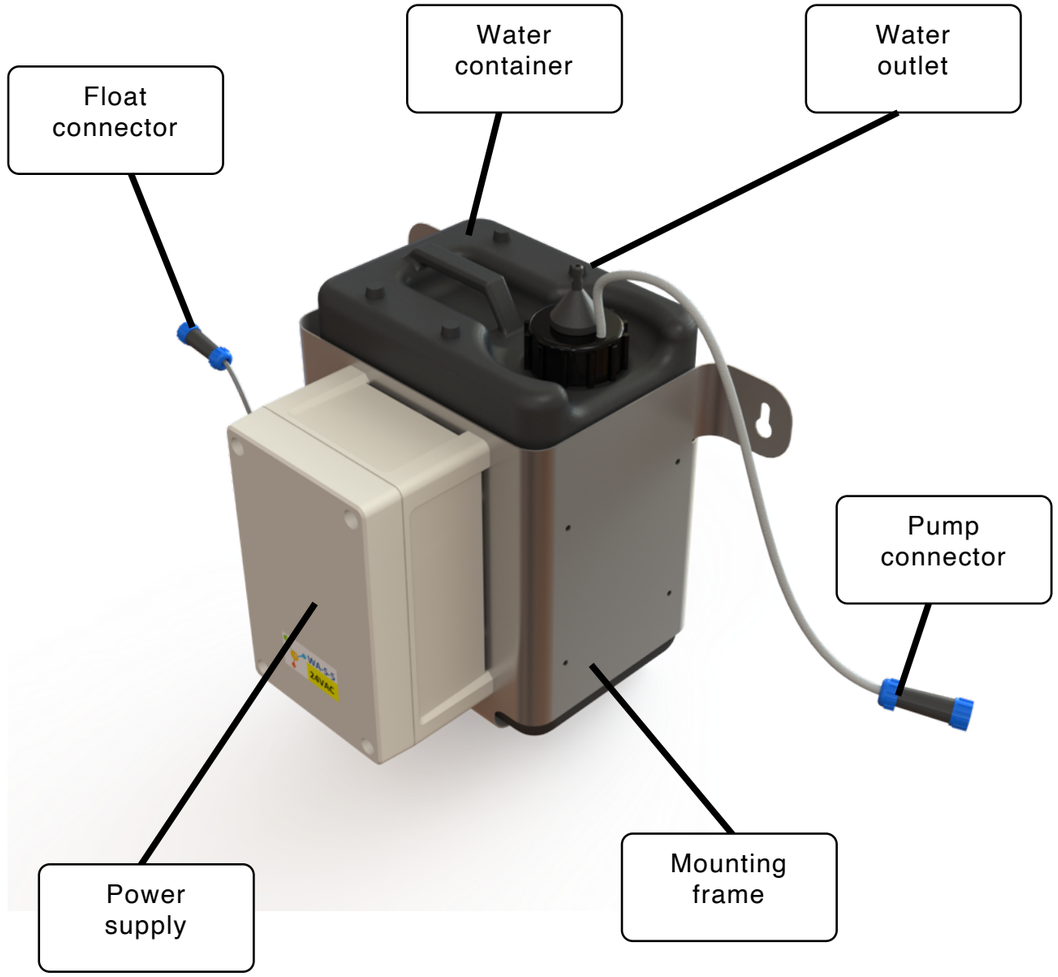
Rev.8

Manual Contents

Box Contents

- ✓ WA series washer (consisting water reservoir, frame and PSU)
- ✓ 5mm ID hose (12m)
- ✓ Twin jet washer nozzle
- ✓ Washer jet mounting bracket
- ✓ Stainless steel screws to secure PSU to frame
- ✓ Cable ties to secure hose to washer jet and water outlet
- ✓ Installation manual

Introducing the WA-x-Series Washer



Required Items for Installation

You will need the following -

- ✓ Three wall fixing (maximum 6mm in diameter)
- ✓ A suitable screwdriver
- ✓ A drill and suitable drill bit
- ✓ Terminal screwdriver

Factory Fitted Options

Float Switch

The float switch prevents the washer unit from running dry and therefore causing damage to the pump. When the water level drops too low the switch is activated and the power is cut to the pump.

Note

The float switch is supplied pre-installed with a suitable plug attached. Simply connect to the corresponding socket on the PSU to connect.

Should you wish to refill the reservoir away from the installation remove the tab at the top of the frame, disconnect the float switch plug and slide the reservoir out of the cradle.

Alarm Output

The alarm output option has to be used in combination with the float switch option. The purpose of the alarm output option is to allow the washer to be connected to a suitable alarm input on a telemetry device. When the water level drops to a too low, the float switch is activated causing the power to the pump to be cut off (preventing it from running dry and burning out) and activating an alarm that can then be acted upon.

Assembly and Installation

The WA series washer is very flexible in its design allowing the PSU to be mounted on the stainless steel frame or adjacent to the unit on a wall or back plane. This allows the installer to mount the units in areas that have limited space.

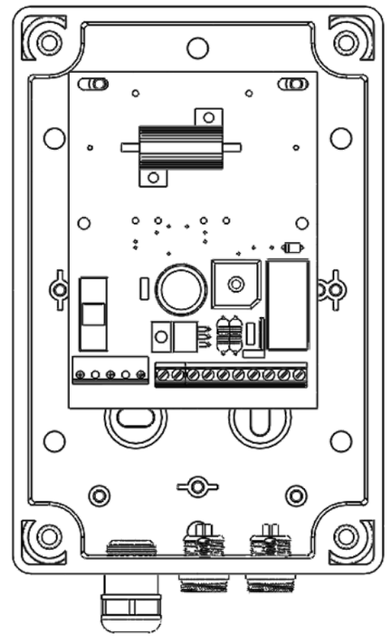
If you are mounting the PSU on the frame there are screws supplied to fit it as per page 3. If you choose to mount it on a wall or surface adjacent to frame ensure the plug for the pump can still comfortably reach the connector socket.

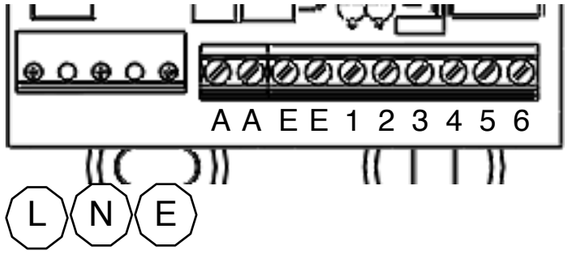
Please Note

To protect the appearance of the stainless steel frame it is supplied with a plastic coating. Once you are happy with the location of the washer this coating can be removed.

Connection Information

Low-Voltage Version



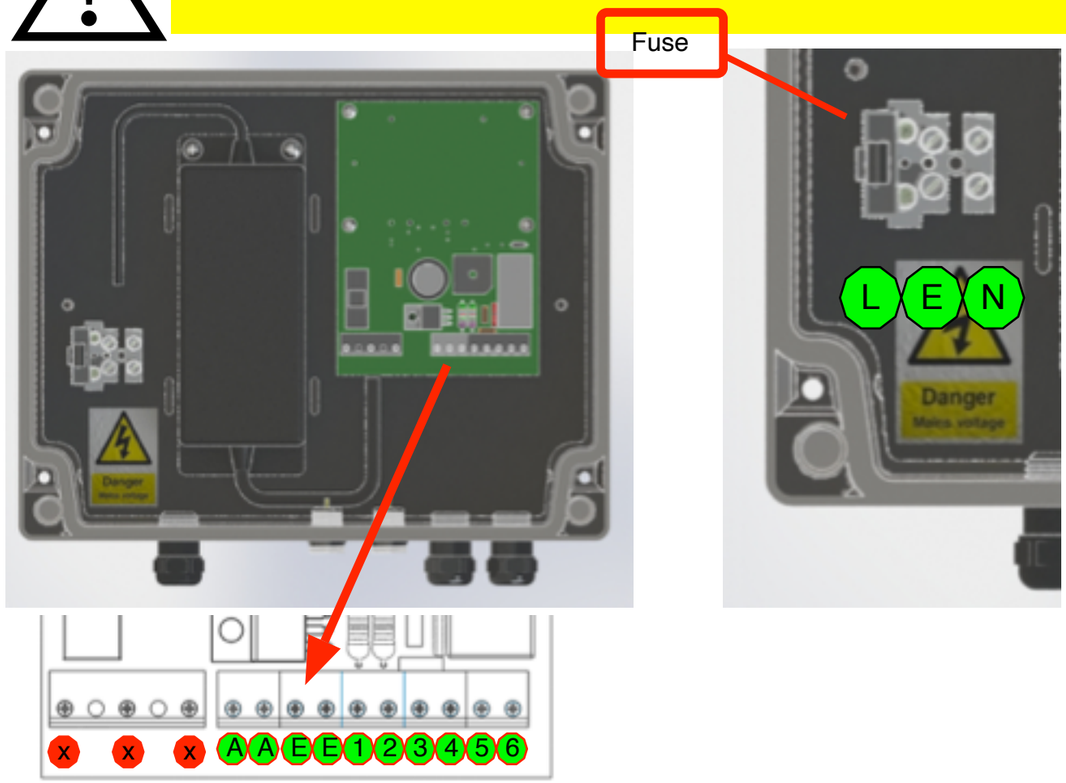


Connection Information	
L	(+v) input
N	(-v) input
E	Earth
A	Alarm Output
A	Alarm Output
E	Earth Link
E	Earth Link
1	-v to pump (pre-wired to connector)
2	+v to pump (pre-wired to connector)
3	Float switch (pre-wired to connector)
4	Float switch (pre-wired to connector)
5	Control
6	Control

Connection Information

Mains Voltage Version

IMPORTANT! THE UNIT MUST BE ISOLATED FROM THE POWER BEFORE THE LID IS REMOVED. FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY

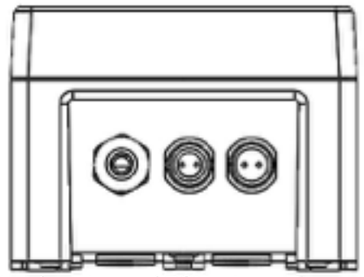


Mains Input Fuse = 2amp

DO NOT CONFUSE

Connection Information	
X	Pre-wired terminal (DO NOT TOUCH)
A	Alarm Output
A	Alarm Output
E	Earth Link
E	Earth Link
1	-v to pump (pre-wired to connector)
2	+v to pump (pre-wired to connector)
3	Float switch (pre-wired to connector)
4	Float switch (pre-wired to connector)
5	Control
6	Control

Set-up and usage



View from base of PSU – low voltage model illustrated

All models come with a 16mm cable gland and one (or two depending on options) pre-wired connectors.

Connectors are plug/socket male-female, female-male preventing connection errors.

Operational Instructions

The WA series washers can be activated in two different ways. Either by switching the power on and off or by using a relay to close / open the control inputs on the power supply printed circuit board.

The choice of methods will depend on the associated equipment available on the installation.

If the float switch is not being used then the float switch terminals (3 and 4) will be linked.

Note

The maximum time for each wash cycle should not exceed 20 seconds. Ensure that telemetry functions (if using the CONTROL method) is set to momentary and not latching.

Routine Maintenance

Ensure the bottle is clear of debris that could block the pump. Only use clean water or water with a diluted screen wash solution.

If no float switch option is fitted regular checks should be made on the water level. If the submersible pump is run when there is no water in the bottle, there is a chance it will fail.

The 5mm hose to the twin-jet washer should be checked for any sign of algae building up inside.

FAQ

Latching or Momentary Control?

We would always recommend that the washer control function is set to momentary, or at the very least timed.

Setting it to latching can result in the operating forgetting it is on and running the bottle out of water. Although the float switch feature will prevent the pump from burning out it will mean that you need to go and refill it far more often than you had planned.

Can I Use Screenwash or Anti-freeze?

We would recommend you use a vehicle screen wash / anti-freeze in the water container, diluted as per the manufacturer's recommendation.

The washer will continue to work so long as the fluid remains...well fluid. If freezing occurs you will run the risk of damaging the pump.

Can I Get a CAD Drawing?

Yes.

All our products are designed by us on Solidworks 3D CAD software. We can provide you with simple PDF line drawings (some available on the site already) or any number of other formats including DXF, DWG, eDrawing etc.

Email support@its-products.co.uk with your requirements and we will see how we can help.

Our website has lots of helpful tips and advice on all our products. See the Help Docs section on each page as you navigate around.

SCAN ME

Fault Finding

WA Washer Pump Not Activating

The most common reason for this is when you are using the switching power method to turn the washer on or off. If you are sure you are getting power to the unit correctly (and other factors such as fuses have been ruled out) have you checked to see if you have bridged the CONTROL inputs on the washer PSU. In the image a loop of tinned copper wire has been used.

These CONTROL connectors are only used to connect a device such as a telemetry receiver.

Fault Finding Procedure on Washer with RS485 Option

Assuming the unit has been operating correctly up until now.

Check water level is above the float switch if too low the float switch will not let the pump operate.

Check on board 20mm fuse 6.3amp is the rating. This fuse is on the washer pump PCB.

Short out the control input terminals to manually operate the washer pump... if pump does not work then check the float switch input and make sure it is short circuit when water level is above the float.

If the above is successful in operating the pump and no faults were found then we can move on to the RS485 receiver board fault finding.

Do the relays on the RS485 board click in response to the incoming RS485 message command?

What is the baud rate and protocol you are using to operate the unit?

Is the power LED illuminated on the RS485 board?

RS 485 Option

Introduction

The RS485 option allows the WA series to be operated in a standalone environment without the need for input from a camera or telemetry receiver. It creates a device on an RS485 network that is addressable from a telemetry keyboard or VMS system.

Latching v Momentary Connection

The RS485 washer comes configured to use on PELCO D protocol at 9600 baud rate, no parity, 1 stop (9600,n,1).

The receiver firmware comes with protocol 10 loaded as per the protocol setting procedure page 9 in the BBV receiver manual. The switch settings for number 10 are not listed in the BBV manual but here they are: { off : on : off : on : off : off : off }.

The AUX1 relay on the receiver is used to control the washer pump and must be used in momentary or timed from the control/vms system for no more than 20seconds at a time. The unit comes with the Aux1 prewired to the Washer psu control input as standard.

The Protocol 10 will provide a simple method to achieve the timed wash function the preset 80 command will initiate the 5 seconds AUX1 which will run the pump then stop the pump after the 5 seconds which in most cases will be plenty to soak the screen. As part of this cycle initiated by preset 80 Aux2 will be activated for 5 seconds as Aux 1 stops. Aux2 can be used to operate a wiper if required, or to extend the wash by a further 5 seconds if you connect in parallel AUX1 AND AUX2 contacts.

If you are unsure as to what method is best for you and your system, please contact us immediately.

Factory Settings

Where possible we will configure the telemetry receiver to your requirements to make installation as simple as possible on site.

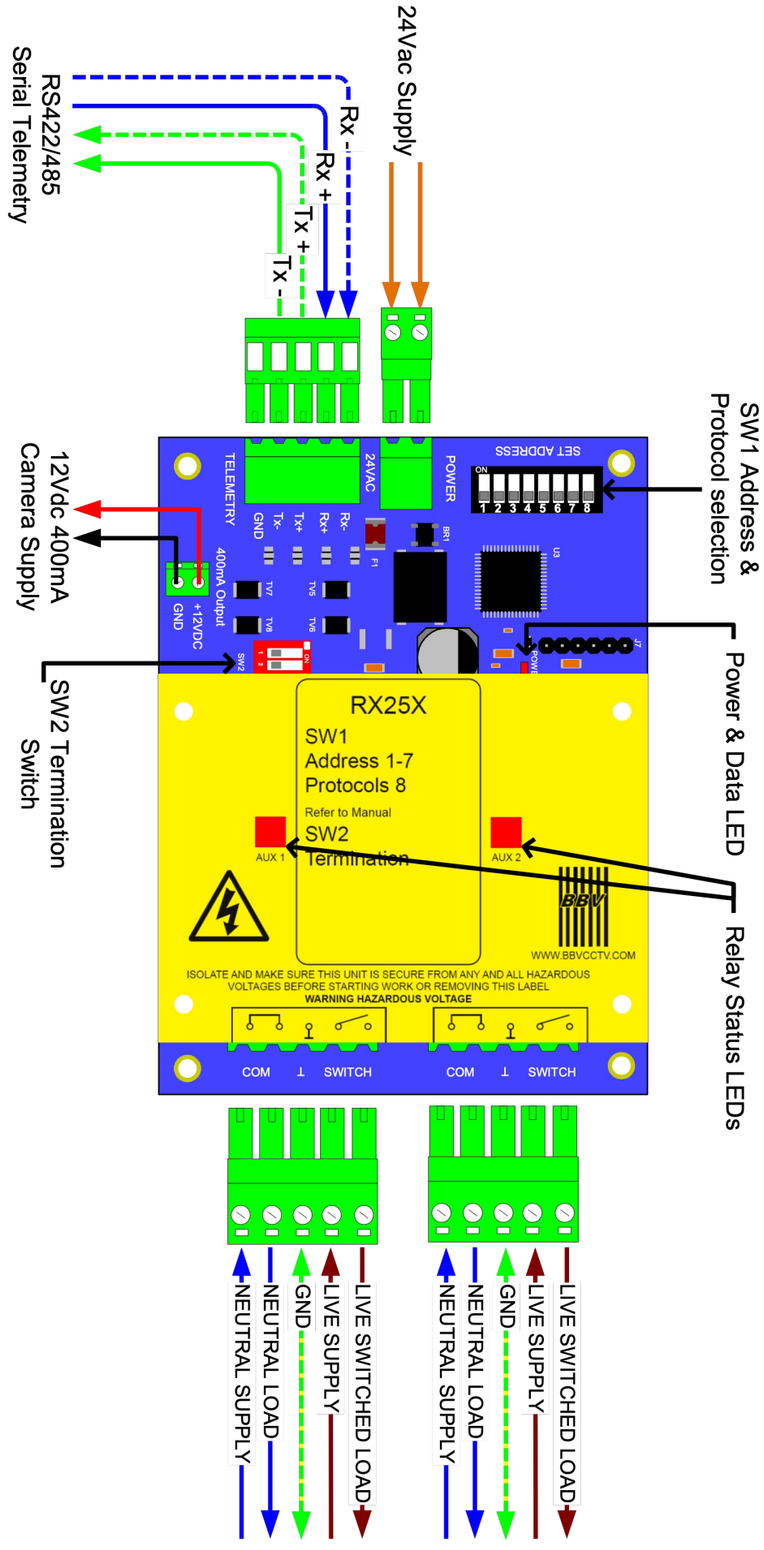
The factory settings are detailed on the lid of the power supply and will include –

- Protocol
- Baud rate
- Parity
- Stop bit

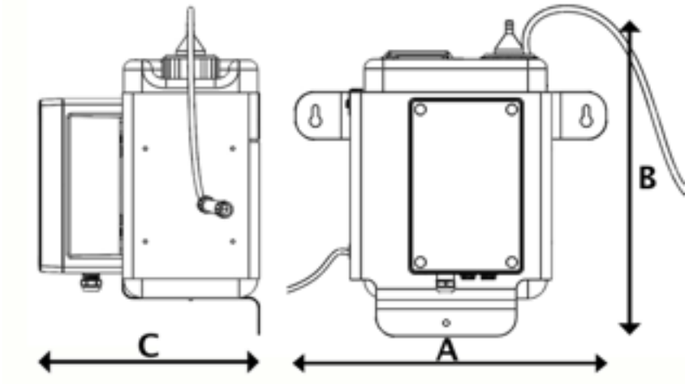
Please do not remove the sticker.

Connections

All connection will be pre-wired within the WA series PSU. All you will need to do to connect the washer to your system is to connect your power input and your telemetry control input as directed in the enclosed manuals.



Technical Information



Dimensions (mm's)			
	A	B	C
WA-5-S	332	336	238
WA-10-S	392	395	320
WA-25-S	395	526	400

General

Technical Data			
Order Code	WA-5-S	WA-10-S	WA-25-S
Reservoir Capacity	5 itres	10 litres	25 litres
Head pumping height	12 metres		
Power consumption	60 watts		
Voltage	24vac (Standard), 24vdc (Option), 220-230vac (Option)		
Construction	316 grade stainless steel frame		
Connection (power in)	Screw terminal		
Connection (pump / float)	Multipole plug / socket		
Control / Operation	Switch power or via control contacts on PSU		
Environmental rating	BS. EN60529 level IP66		
Operating Temperature	-5°C to 60°C		

Certification

CE compliant

Warranty Information

The WA-x-S series Washer comes with a 2-year warranty as standard. The warranty covers the WA series against manufacturing failure and is on a return to manufacturer basis.

In the unlikely event that you have a problem with the product please contact us at the address on in the Contact Us section of this manual.

About the WA Series Washer

The WA-x-S series washer is designed and manufactured by ITS Products in the UK.

Contact Us

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